



467826

September 1, 2011

Mr. W. Owen Thompson
Remedial Project Manager
Superfund Remedial Response Section Seven
U.S. EPA Region 5, SR-6J
77 W. Jackson Blvd.
Chicago, IL 60604
Phone (312) 886-4843
Machine Fax (312) 353-8426

Subject: Additional Excavation of DS Tributary Work Plan Addendum (Revised)
Detrex Source Control Area – Fields Brook Superfund Site
Detrex Corporation, Ashtabula, Ohio
Docket No. V-W-98-C-450

Dear Mr. Thompson:

On behalf of Detrex Corporation (Detrex), URS Corporation (URS) is submitting this revised Work Plan Addendum for the additional investigation of a portion of the DS Tributary extending from State Road Bridge to the east along the DS Tributary. Per recent data provided to the United States Environmental Protection Agency (USEPA) by the Fields Brook Action Group (FBAG), Detrex has elected to complete additional sampling and evaluation in order to assess any potential impacts in this area. Since Detrex had previously submitted a Work Plan to address the DS Tributary area west of State Road, the addendum outlined herein provides details for proposed additional investigation for review by the USEPA prior to implementation.

BACKGROUND

In late July 2011, FBAG met with USEPA personnel and presented data obtained from sampling in the eastern portion of the DS Tributary. Detrex was not made aware of this data until after the meeting between FBAG and USEPA and has only recently had an opportunity to review the data. Based on discussion between USEPA and Detrex an Addendum to the previously submitted Additional Excavation of DS Tributary Work (URS, 2011), Detrex intends to complete an additional investigation to evaluate sediment conditions along the eastern portion of the DS Tributary extending from the State Road culvert to the east approximately 400 feet. This is the same area that was previously sampled by Detrex on April 29, 2011, when URS and Detrex personnel completed a visual inspection of the DS Tributary, both upstream and downstream of the State Road Culvert. Sampling results were reported to USEPA in a letter dated May 24, 2011.

The results of the April 2011 sampling did not indicate any significant impacts and no DNAPL or sheen was noted at the time of the sampling. However, the data reported to USEPA by FBAG was not consistent with the April 2011 results. As a result, Detrex is proposing to perform additional investigation east of State Road Bridge along the DS Tributary. Further details related to this investigation are outlined in the following proposed Scope of Work (SOW).

Mr. W. Owen Thompson
United States Environmental Protection Agency
September 1, 2011
Page 2 of 4

Additionally, as part of the July 2011 FBAG presentation to USEPA data from an area referred to as the "Detrex Ditch" was reported. The location of this ditch is on Detrex property and is located within the existing storm water collection system. Detrex intends to complete a field reconnaissance effort in this area with USEPA and USEPA's contractor to describe the facility conditions in this area. At this time, no further sampling in this area is planned. Further details related to this investigation are outlined in the following proposed Scope of Work (SOW).

SCOPE OF WORK FOR ADDITIONAL INVESTIGATION

The area of proposed additional investigation is shown on **Figure 1**. Detrex will perform the following items as part of the proposed SOW for the eastern portion of the DS Tributary.

- Initial visual reconnaissance of the DS Tributary extending from the east side of the State Road culvert to approximately 400 feet east along the DS Tributary, as well as the area referred to by FBAG as the "Detrex Ditch".
 - Field notes and a photographic log will be completed as part of the visual reconnaissance.
- Completion of a Closed Circuit Television (CCTV) camera inspection of the State Road drain and culvert, extending from east to west underneath State Road. Additionally, during the FBAG sampling event in June 2011, a reported 14-inch diameter line was identified as shown in **Figure 1**. The presence of this line was not previously known by Detrex and the origin of the line is undetermined. In order to further investigate this line Detrex also intends to complete a CCTV inspection of the 14-inch line. Further details are provided below.
- Completion of additional surface water and sediment sampling from the east side of the existing State Road culvert to the east, approximately 400 feet along the DS Tributary. The sampling area and sample locations are also shown in **Figure 1**. Further details are provided below.
- Preparation of a letter report describing the visual field reconnaissance, CCTV inspection, sediment sampling activities, and field results/observations, as appropriate will be prepared and submitted to the USEPA within 30 days following the receipt laboratory analytical data.

CLOSED CIRCUIT TELEVISION (CCTV) INSPECTION

URS proposes to conduct closed circuit television (CCTV) inspection for the 3' X 5' box culvert and adjacent 48" diameter storm pipe connecting the eastern and western sides of the DS Tributary underneath State Road. The inspection will provide a condition assessment of the pipeline. Additionally, the CCTV equipment also has the capability to investigate the previously unknown 14-inch line that was identified during the FBAG sampling event (see **Figure 1**).

URS will utilize an EnviroSight® 600 crawler camera to inspect the culvert. The camera would enter at the upstream end of the stream and head downstream to the outlet of the culvert. The camera has the



Mr. W. Owen Thompson
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ability to pan and tilt 360 degrees and zoom to identify problem areas. The camera is a robot type of camera that is controlled from a specialized truck used specifically for the inspection.

URS will attempt this inspection but may be prohibited by trapped pipes or debris. If necessary, a manned walk through of the pipe using a hand held video camera would be conducted to achieve the inspection. If a walk through is required, this will be completed using Confined Space Entry procedures and monitoring.

CCTV logs will be made that will include observations found during the inspections. URS will generate a letter report with the findings, logs and provide copies of the CCTV inspection on video tape or DVD. Based on the results of the CCTV inspection, additional investigation of the 14-inch sewer and other features may be required. The letter report will also provide information outlining the scope of any potential additional investigations.

EASTERN DS TRIBUTARY SEDIMENT SAMPLING

URS is proposing to sample surface water and sediments within the eastern portion of the DS Tributary at six (6) equally spaced locations, on approximately 75 foot spacing (see **Figure 1**). Sampling procedures will be similar to those previously approved and completed as part of the *Sediment / DNAPL Delineation Work Plan* (URS, 2009). Details related to the procedures are not reiterated herein, but a general overview of the sampling procedure is provided below.

Upon completion of the field reconnaissance, a sediment hand augering program will be conducted in the eastern portion of the DS Tributary. It is anticipated that hand augering locations will be approximately 75 feet apart, beginning on the east side of the State Road culvert and extending to the east approximately 400 feet. At each location, a 3 ½ inch diameter hand auger will be advanced through sediment into underlying soil to a depth of no more than 2 feet below ground surface (ft-bgs) or refusal. If water is present a 4-inch diameter PVC pipe will be driven into the channel to prevent surface water from entering the location during sampling. The depth of sediment will be recorded and a sediment sample will be collected at each of the six (6) locations (i.e., DSTSED2011-01 thru DSTSED2011-06). The sediment samples will subsequently be submitted for analytical testing. The sediment samples will be analyzed for volatile organic constituents (VOCs) utilizing USEPA Test Method 5035 – 8260B, and semi-volatile organic constituents (SVOCs) utilizing USEPA Test Method – 8270C. If surface water is present, samples will be collected at coincident locations and submitted for analytical testing. Surface water samples will be identified as (DSTSW2011-01 thru DSTSW2011-06). The surface water samples will be analyzed for VOCs utilizing USEPA Test Method 8260B, and SVOCs utilizing USEPA Test Method – 8270C. A location and elevation survey will be conducted using a GPS unit.

REPORTING

Following the completion of all proposed field work and the receipt of the data from the analytical laboratory, URS will prepare and submit a letter report, on behalf of Detrex, to the USEPA. The letter



Mr. W. Owen Thompson
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report will document the methodologies, observations, results, and data evaluation from the completed investigation. The letter report will be submitted within 30 days of the receipt of the analytical data.

SCHEDULE

Once USEPA has reviewed the revised Scope of Work for the proposed additional investigation in the DS Tributary channel area east of State Road, Detrex would like to implement the work as soon as possible. Detrex would like to complete this proposed work in conjunction with the previously scheduled western DS Tributary Excavation Work Plan which has already been approved by the USEPA. The DS Tributary work is tentatively planned for mid- to late-September 2011, pending favorable weather conditions.

If you have any questions regarding this submittal, please do not hesitate to contact me at 216-622-2432 at your convenience.

Sincerely,

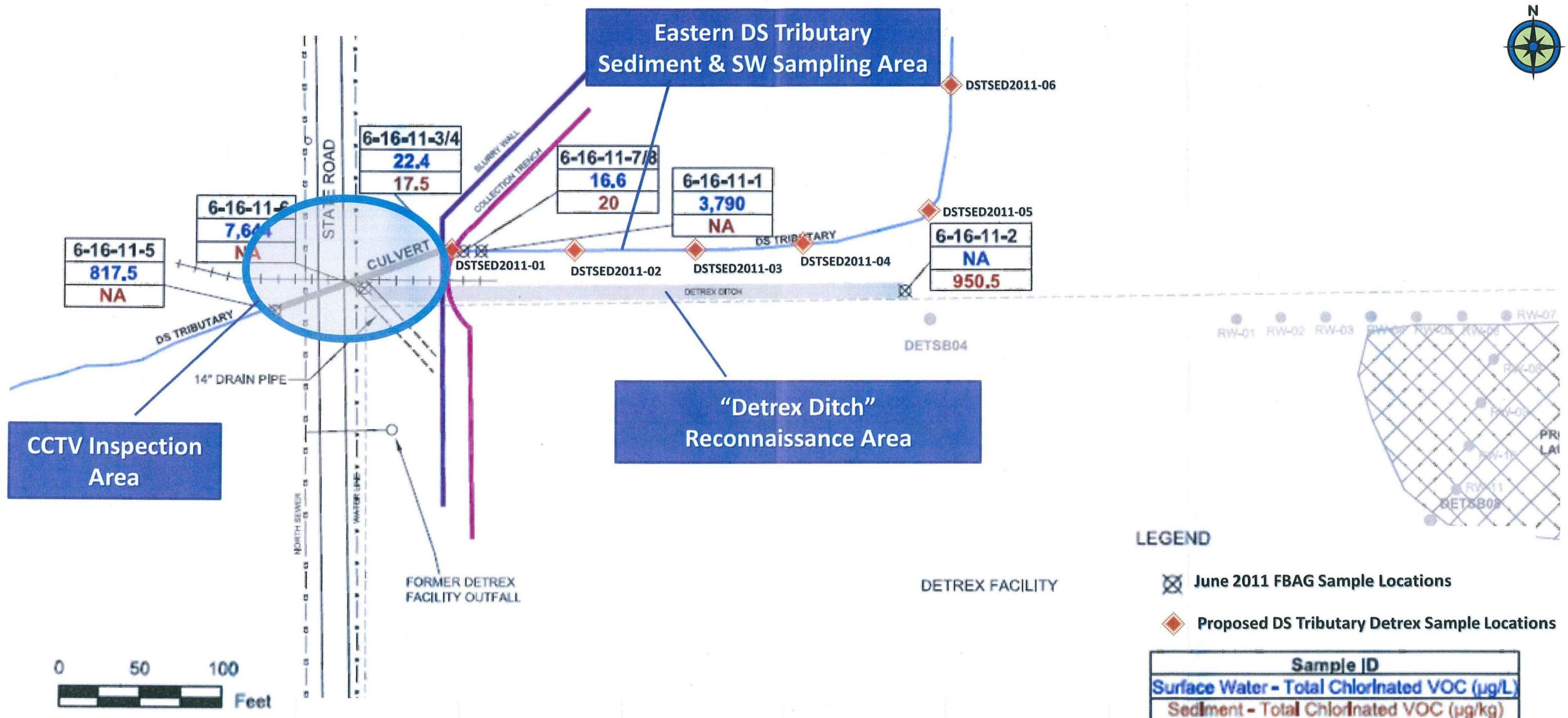
URS Corporation - Ohio

Martin L. Schmidt, Ph.D.
Vice President

Enclosure – Figure 1

cc: R. Currie – Detrex Corporation
T. Steib – Detrex Corporation
T. Doll - Detrex Corporation
D. Gray – URS Corporation
R. Williams – Ohio EPA
W. Earle – SulTRAC
File Copy

Detrex Site – Proposed Eastern DS Tributary Investigation Locations



Note: Figure reproduced from FBAG Slide (July 2011 USEPA Meeting)

Microbac Laboratories, Inc.
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1962 WAGER ROAD
ERIE, PA 16509
(814) 825-8533 FAX (814) 825-9254
CHERI A. ESTES, MANAGING DIRECTOR
<http://www.microbac.com> E-Mail: erie@microbac.com

18 August 2011

Valerie A. Rule, P.E.
O & M, Inc.
450 Montbrook Lane
Knoxville, TN 37919
RE: Fields Brook

Enclosed are the results of analyses for samples received by the laboratory on 06/20/2011 15:00. If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Jeff Porte For Cheri Estes
Lab Manager



Microbac Laboratories, Inc.
Erie Division
1962 Wager Road • Erie, PA 16509 • Phone: 814-825-8533 • Fax: 814-825-9254
Cheri Estes, Managing Director • E-mail: erie@microbac.com • http://www.microbac.com

CERTIFICATE OF ANALYSIS

Work Order Number:

11F3016

O & M, Inc.
450 Montbrook Lane
Knoxville TN, 37919

Project Number: Fields Brook
Project Manager: Valerie A. Rule, P.E.

Reported:
08/18/2011 13:45

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
6-16-11-1	11F3016-01	Water	06/16/2011 00:00	06/20/2011 15:00
6-16-11-2	11F3016-02	Solid	06/16/2011 00:00	06/20/2011 15:00
6-16-11-3	11F3016-03	Solid	06/16/2011 00:00	06/20/2011 15:00
6-16-11-4	11F3016-04	Water	06/16/2011 00:00	06/20/2011 15:00
6-16-11-5	11F3016-05	Water	06/16/2011 00:00	06/20/2011 15:00
6-16-11-6	11F3016-06	Water	06/16/2011 00:00	06/20/2011 15:00
6-16-11-7	11F3016-07	Water	06/16/2011 00:00	06/20/2011 15:00
6-16-11-8	11F3016-08	Solid	06/16/2011 00:00	06/20/2011 15:00

The Volatile and Semi-Volatile Organic Compound analyses were sub-contracted to Microbac Laboratories, Inc./Chicagoland Division. NELAC PA ID# 21-00133 (W.O. 11F1227).

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Erie Division

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Cheri Estes, Managing Director • E-mail: erie@microbac.com • http://www.microbac.com**CERTIFICATE OF ANALYSIS**

Work Order Number:

11F3016

O & M, Inc.

450 Montbrook Lane
Knoxville TN, 37919Project Number: Fields Brook
Project Manager: Valerie A. Rule, P.E.Reported:
08/18/2011 13:45

6-16-11-1

11F3016-01 (Water)

Analyte	Result	Units	Reporting Limit	MDL	Batch	Analyst	Prepared	Analyzed
8260		Method: SW-846 8260B						
1,1,1,2-Tetrachloroethane	100U	µg/L	100	11	B016531	JLN	06/29/2011	06/29/2011
1,1,1-Trichloroethane	50U	µg/L	50	9	B016531	JLN	06/29/2011	06/29/2011
1,1,2,2-Tetrachloroethane	220D	µg/L	50	14	B016531	JLN	06/29/2011	06/29/2011
1,1,2-Trichloroethane	50U	µg/L	50	9	B016531	JLN	06/29/2011	06/29/2011
1,1-Dichloroethane	50U	µg/L	50	8	B016531	JLN	06/29/2011	06/29/2011
1,1-Dichloroethene	50U	µg/L	50	17	B016531	JLN	06/29/2011	06/29/2011
1,2-Dichloroethane	50U	µg/L	50	12	B016531	JLN	06/29/2011	06/29/2011
1,2-Dichloropropane	50U	µg/L	50	10	B016531	JLN	06/29/2011	06/29/2011
2-Butanone	100U	µg/L	100	36	B016531	JLN	06/29/2011	06/29/2011
2-Hexanone	100U	µg/L	100	24	B016531	JLN	06/29/2011	06/29/2011
4-Methyl-2-Pentanone	100U	µg/L	100	17	B016531	JLN	06/29/2011	06/29/2011
Acetone	500U	µg/L	500	58	B016531	JLN	06/29/2011	06/29/2011
Acrolein	1000U	µg/L	1000	158	B016531	JLN	06/29/2011	06/29/2011
Acrylonitrile	1000U	µg/L	1000	130	B016531	JLN	06/29/2011	06/29/2011
Benzene	50U	µg/L	50	8	B016531	JLN	06/29/2011	06/29/2011
Bromodichloromethane	50U	µg/L	50	7	B016531	JLN	06/29/2011	06/29/2011
Bromoform	50U	µg/L	50	8	B016531	JLN	06/29/2011	06/29/2011
Bromomethane	100U	µg/L	100	18	B016531	JLN	06/29/2011	06/29/2011
Carbon Disulfide	100U	µg/L	100	17	B016531	JLN	06/29/2011	06/29/2011
Carbon tetrachloride	50U	µg/L	50	17	B016531	JLN	06/29/2011	06/29/2011
Chlorobenzene	50U	µg/L	50	8	B016531	JLN	06/29/2011	06/29/2011
Chloroethane	100U	µg/L	100	23	B016531	JLN	06/29/2011	06/29/2011
Chloroform	50U	µg/L	50	9	B016531	JLN	06/29/2011	06/29/2011
Chloromethane	100U	µg/L	100	10	B016531	JLN	06/29/2011	06/29/2011
cis-1,2-Dichloroethene	880D	µg/L	50	8	B016531	JLN	06/29/2011	06/29/2011
cis-1,3-Dichloropropene	50U	µg/L	50	8	B016531	JLN	06/29/2011	06/29/2011
Dibromochloromethane	50U	µg/L	50	8	B016531	JLN	06/29/2011	06/29/2011
Ethylbenzene	50U	µg/L	50	9	B016531	JLN	06/29/2011	06/29/2011
m,p-Xylene	50U	µg/L	50	17	B016531	JLN	06/29/2011	06/29/2011
Methylene chloride	100U	µg/L	100	31	B016531	JLN	06/29/2011	06/29/2011
Methyl-t-Butyl Ether	50U	µg/L	50	8	B016531	JLN	06/29/2011	06/29/2011

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Cheri Estes, Managing Director • E-mail: erie@microbac.com • <http://www.microbac.com>

CERTIFICATE OF ANALYSIS

Work Order Number:

11F3016

O & M, Inc.

450 Montbrook Lane
Knoxville TN, 37919

Project Number:Fields Brook

Project Manager: Valerie A. Rule, P.E.

Reported:

08/18/2011 13:45

6-16-11-1

11F3016-01 (Water)

Analyte	Result	Units	Reporting Limit	MDL	Batch	Analyst	Prepared	Analyzed
8260	Method: SW-846 8260B							
o-Xylene	50U	µg/L	50	9	B016531	JLN	06/29/2011	06/29/2011
Styrene	50U	µg/L	50	7	B016531	JLN	06/29/2011	06/29/2011
Toluene	50U	µg/L	50	9	B016531	JLN	06/29/2011	06/29/2011
trans-1,2-Dichloroethene	50J	µg/L	50	11	B016531	JLN	06/29/2011	06/29/2011
trans-1,3-Dichloropropene	50U	µg/L	50	7	B016531	JLN	06/29/2011	06/29/2011
Trichloroethene	240D	µg/L	50	9	B016531	JLN	06/29/2011	06/29/2011
Trichlorofluoromethane	100U	µg/L	100	11	B016531	JLN	06/29/2011	06/29/2011
Vinyl Acetate	100U	µg/L	100	15	B016531	JLN	06/29/2011	06/29/2011
Vinyl chloride	74D	µg/L	20	9	B016531	JLN	06/29/2011	06/29/2011
Total 1,2-Dichloroethene	890D	µg/L	50	8	B016531	JLN	06/29/2011	06/29/2011
Total Xylenes	50U	µg/L	50	9	B016531	JLN	06/29/2011	06/29/2011
<i>Surrogate: 1,2-Dichloroethane-d4</i>	108 %	74.5-132		B016531	06/29/2011	06/29/2011	<i>SW-846 8260B</i>	
<i>Surrogate: 4-Bromofluorobenzene</i>	106 %	80-120		B016531	06/29/2011	06/29/2011	<i>SW-846 8260B</i>	
<i>Surrogate: Dibromofluoromethane</i>	107 %	80-120		B016531	06/29/2011	06/29/2011	<i>SW-846 8260B</i>	
<i>Surrogate: Toluene-d8</i>	96.0 %	80-120		B016531	06/29/2011	06/29/2011	<i>SW-846 8260B</i>	

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450 Montbrook Lane
Knoxville TN, 37919

Project Number: Fields Brook
Project Manager: Valerie A. Rule, P.E.

Reported:
08/18/2011 13:45

6-16-11-1

11F3016-01RE1 (Water)

Analyte	Result	Units	Reporting Limit	MDL	Batch	Analyst	Prepared	Analyzed
8260	2400D	µg/L	500	130	B016531	JLN	06/29/2011	06/29/2011

Method: SW-846 8260B

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Project Number:Fields Brook

Project Manager: Valerie A. Rule, P.E.

Reported:

08/18/2011 13:45

6-16-11-2

11F3016-02 (Solid)

Analyte	Result	Units	Reporting Limit	MDL	Batch	Analyst	Prepared	Analyzed
8260								
Method: SW-846 8260B								
1,1,1,2-Tetrachloroethane	10U	µg/Kg	10	0.6	B016317	BR	06/23/2011	06/23/2011
1,1,1-Trichloroethane	5.0U	µg/Kg	5.0	1	B016317	BR	06/23/2011	06/23/2011
1,1,2,2-Tetrachloroethane	5.0U	µg/Kg	5.0	1.4	B016317	BR	06/23/2011	06/23/2011
1,1,2-Trichloroethane	5.0U	µg/Kg	5.0	0.8	B016317	BR	06/23/2011	06/23/2011
1,1-Dichloroethane	5.0U	µg/Kg	5.0	0.7	B016317	BR	06/23/2011	06/23/2011
1,1-Dichloroethene	5.0U	µg/Kg	5.0	1.2	B016317	BR	06/23/2011	06/23/2011
1,2-Dichloroethane	5.0U	µg/Kg	5.0	1.2	B016317	BR	06/23/2011	06/23/2011
1,2-Dichloropropane	5.0U	µg/Kg	5.0	1	B016317	BR	06/23/2011	06/23/2011
2-Butanone	100	µg/Kg	10	3.6	B016317	BR	06/23/2011	06/23/2011
2-Hexanone	10U	µg/Kg	10	2.4	B016317	BR	06/23/2011	06/23/2011
4-Methyl-2-Pentanone	10U	µg/Kg	10	1.7	B016317	BR	06/23/2011	06/23/2011
Acrolein	100U	µg/Kg	100	15.8	B016317	BR	06/23/2011	06/23/2011
Acrylonitrile	100U	µg/Kg	100	13	B016317	BR	06/23/2011	06/23/2011
Benzene	5.0U	µg/Kg	5.0	1.2	B016317	BR	06/23/2011	06/23/2011
Bromodichloromethane	5.0U	µg/Kg	5.0	0.5	B016317	BR	06/23/2011	06/23/2011
Bromoform	5.0U	µg/Kg	5.0	0.7	B016317	BR	06/23/2011	06/23/2011
Bromomethane	10U	µg/Kg	10	3.6	B016317	BR	06/23/2011	06/23/2011
Carbon Disulfide	10J	µg/Kg	10	1.7	B016317	BR	06/23/2011	06/23/2011
Carbon tetrachloride	5.0U	µg/Kg	5.0	1.2	B016317	BR	06/23/2011	06/23/2011
Chlorobenzene	5.0J	µg/Kg	5.0	0.6	B016317	BR	06/23/2011	06/23/2011
Chloroethane	10U	µg/Kg	10	2.4	B016317	BR	06/23/2011	06/23/2011
Chloroform	22	µg/Kg	5.0	0.6	B016317	BR	06/23/2011	06/23/2011
Chloromethane	10U	µg/Kg	10	1.5	B016317	BR	06/23/2011	06/23/2011
cis-1,2-Dichloroethene	28	µg/Kg	5.0	0.8	B016317	BR	06/23/2011	06/23/2011
cis-1,3-Dichloropropene	5.0U	µg/Kg	5.0	0.8	B016317	BR	06/23/2011	06/23/2011
Dibromochloromethane	5.0U	µg/Kg	5.0	0.8	B016317	BR	06/23/2011	06/23/2011
Ethylbenzene	5.0J	µg/Kg	5.0	0.7	B016317	BR	06/23/2011	06/23/2011
m,p-Xylene	5.0J	µg/Kg	5.0	1.6	B016317	BR	06/23/2011	06/23/2011
Methylene chloride	20U	µg/Kg	20	8.70	B016317	BR	06/23/2011	06/23/2011
Methyl-t-Butyl Ether	5.0U	µg/Kg	5.0	0.6	B016317	BR	06/23/2011	06/23/2011
o-Xylene	5.0U	µg/Kg	5.0	0.9	B016317	BR	06/23/2011	06/23/2011

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Microbac

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O & M, Inc.

450 Montbrook Lane
Knoxville TN, 37919

Project Number: Fields Brook
Project Manager: Valerie A. Rule, P.E.

Reported:
08/18/2011 13:45

6-16-11-2

11F3016-02 (Solid)

Analyte	Result	Units	Reporting Limit	MDL	Batch	Analyst	Prepared	Analyzed
8260		Method: SW-846 8260B						
Styrene	5.0U	µg/Kg	5.0	0.8	B016317	BR	06/23/2011	06/23/2011
Toluene	5.0J	µg/Kg	5.0	0.7	B016317	BR	06/23/2011	06/23/2011
trans-1,2-Dichloroethene	5.0J	µg/Kg	5.0	1	B016317	BR	06/23/2011	06/23/2011
trans-1,3-Dichloropropene	5.0U	µg/Kg	5.0	0.7	B016317	BR	06/23/2011	06/23/2011
Trichloroethene	65	µg/Kg	5.0	0.9	B016317	BR	06/23/2011	06/23/2011
Trichlorofluoromethane	10U	µg/Kg	10	3.4	B016317	BR	06/23/2011	06/23/2011
Vinyl Acetate	10U	µg/Kg	10	1.5	B016317	BR	06/23/2011	06/23/2011
Vinyl chloride	10U	µg/Kg	10	1.7	B016317	BR	06/23/2011	06/23/2011
Total 1,2-Dichloroethene	29	µg/Kg	10	0.8	B016317	BR	06/23/2011	06/23/2011
Total Xylenes	5.0J	µg/Kg	5.0	0.9	B016317	BR	06/23/2011	06/23/2011
<i>Surrogate: 1,2-Dichloroethane-d4</i>	110 %		51.7-162		B016317 06/23/2011	06/23/2011		<i>SW-846 8260B</i>
<i>Surrogate: 4-Bromofluorobenzene</i>	96.9 %		57.4-135		B016317 06/23/2011	06/23/2011		<i>SW-846 8260B</i>
<i>Surrogate: Dibromofluoromethane</i>	104 %		63.5-139		B016317 06/23/2011	06/23/2011		<i>SW-846 8260B</i>
<i>Surrogate: Toluene-d8</i>	105 %		66.6-143		B016317 06/23/2011	06/23/2011		<i>SW-846 8260B</i>
8270		Method: SW-846 8270C						
1,2,4-Trichlorobenzene	330U	µg/Kg	330	23.88	B016320	BR	06/23/2011	06/27/2011
1,2-Dichlorobenzene	330U	µg/Kg	330	19.39	B016320	BR	06/23/2011	06/27/2011
1,2-Diphenyl-hydrazine	330U	µg/Kg	330	20.79	B016320	BR	06/23/2011	06/27/2011
1,3-Dichlorobenzene	330J	µg/Kg	330	20.09	B016320	BR	06/23/2011	06/27/2011
1,4-Dichlorobenzene	330U	µg/Kg	330	12.39	B016320	BR	06/23/2011	06/27/2011
2,2'-oxybis(1-chloropropane)	330U	µg/Kg	330	16.489	B016320	BR	06/23/2011	06/27/2011
2,4,5-Trichlorophenol	330U	µg/Kg	330	59.16	B016320	BR	06/23/2011	06/27/2011
2,4,6-Trichlorophenol	330U	µg/Kg	330	36.58	B016320	BR	06/23/2011	06/27/2011
2,4-Dichlorophenol	330U	µg/Kg	330	29.08	B016320	BR	06/23/2011	06/27/2011
2,4-Dimethylphenol	330U	µg/Kg	330	29.78	B016320	BR	06/23/2011	06/27/2011
2,4-Dinitrophenol	1600U	µg/Kg	1600	309.79	B016320	BR	06/23/2011	06/27/2011
2,4-Dinitrotoluene	330U	µg/Kg	330	37.18	B016320	BR	06/23/2011	06/27/2011
2,6-Dichlorophenol	330U	µg/Kg	330	23.58	B016320	BR	06/23/2011	06/27/2011
2,6-Dinitrotoluene	330U	µg/Kg	330	36.48	B016320	BR	06/23/2011	06/27/2011
2-Chloronaphthalene	330U	µg/Kg	330	60.36	B016320	BR	06/23/2011	06/27/2011

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CERTIFICATE OF ANALYSIS

Work Order Number:

11F3016

O & M, Inc.

450 Montbrook Lane
Knoxville TN, 37919

Project Number: Fields Brook
Project Manager: Valerie A. Rule, P.E.

Reported:
08/18/2011 13:45

6-16-11-2

11F3016-02 (Solid)

Analyte	Result	Units	Reporting Limit	MDL	Batch	Analyst	Prepared	Analyzed
Method: SW-846 8270C								
8270								
2-Chlorophenol	330U	µg/Kg	330	23.58	B016320	BR	06/23/2011	06/27/2011
2-Methylnaphthalene	330U	µg/Kg	330	20.89	B016320	BR	06/23/2011	06/27/2011
2-Methylphenol	330U	µg/Kg	330	20.89	B016320	BR	06/23/2011	06/27/2011
2-Nitroaniline	1600U	µg/Kg	1600	51.37	B016320	BR	06/23/2011	06/27/2011
2-Nitrophenol	330U	µg/Kg	330	31.479	B016320	BR	06/23/2011	06/27/2011
3,3'-Dichlorobenzidine	1600U	µg/Kg	1600	43.37	B016320	BR	06/23/2011	06/27/2011
3/4-Methylphenol	330J	µg/Kg	330	24.68	B016320	BR	06/23/2011	06/27/2011
3-Nitroaniline	330U	µg/Kg	330	43.17	B016320	BR	06/23/2011	06/27/2011
4,6-Dinitro-2-methylphenol	1600U	µg/Kg	1600	43.07	B016320	BR	06/23/2011	06/27/2011
4-Bromophenyl phenyl ether	330U	µg/Kg	330	22.88	B016320	BR	06/23/2011	06/27/2011
4-Chloro-3-methylphenol	660U	µg/Kg	660	49.17	B016320	BR	06/23/2011	06/27/2011
4-Chloroaniline	330U	µg/Kg	330	33.08	B016320	BR	06/23/2011	06/27/2011
4-Chlorophenyl phenyl ether	330U	µg/Kg	330	21.39	B016320	BR	06/23/2011	06/27/2011
4-Nitroaniline	1600U	µg/Kg	1600	57.86	B016320	BR	06/23/2011	06/27/2011
4-Nitrophenol	1600U	µg/Kg	1600	291.81	B016320	BR	06/23/2011	06/27/2011
Acenaphthene	330U	µg/Kg	330	25.68	B016320	BR	06/23/2011	06/27/2011
Acenaphthylene	330U	µg/Kg	330	18.09	B016320	BR	06/23/2011	06/27/2011
Acetophenone	330U	µg/Kg	330	21.39	B016320	BR	06/23/2011	06/27/2011
Aniline	330U	µg/Kg	330	28.98	B016320	BR	06/23/2011	06/27/2011
Anthracene	330U	µg/Kg	330	20.79	B016320	BR	06/23/2011	06/27/2011
Benzidine	1600U	µg/Kg	1600	1,420.053	B016320	BR	06/23/2011	06/27/2011
Benzo[a]anthracene	330U	µg/Kg	330	44.47	B016320	BR	06/23/2011	06/27/2011
Benzo[a]pyrene	330U	µg/Kg	330	68.65	B016320	BR	06/23/2011	06/27/2011
Benzo[b]fluoranthene	330U	µg/Kg	330	64.66	B016320	BR	06/23/2011	06/27/2011
Benzo[g,h,i]perylene	330U	µg/Kg	330	82.64	B016320	BR	06/23/2011	06/27/2011
Benzo[k]fluoranthene	330U	µg/Kg	330	93.64	B016320	BR	06/23/2011	06/27/2011
Benzoic acid	1600U	µg/Kg	1600	319.79	B016320	BR	06/23/2011	06/27/2011
Benzyl alcohol	660U	µg/Kg	660	31.88	B016320	BR	06/23/2011	06/27/2011
Bis(2-chloroethoxy)methane	330U	µg/Kg	330	21.99	B016320	BR	06/23/2011	06/27/2011
Bis(2-chloroethyl)ether	330U	µg/Kg	330	20.89	B016320	BR	06/23/2011	06/27/2011
Bis(2-ethylhexyl)phthalate	620D	µg/Kg	330	47.27	B016320	BR	06/23/2011	06/27/2011

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Cheri Estes, Managing Director • E-mail: erie@microbac.com • http://www.microbac.com**CERTIFICATE OF ANALYSIS**

Work Order Number:

11F3016

O & M, Inc.

450 Montbrook Lane
Knoxville TN, 37919

Project Number: Fields Brook

Project Manager: Valerie A. Rule, P.E.

Reported:

08/18/2011 13:45

6-16-11-2

11F3016-02 (Solid)

Analyte	Result	Units	Reporting Limit	MDL	Batch	Analyst	Prepared	Analyzed
8270		Method: SW-846 8270C						
Butyl benzyl phthalate	460D	µg/Kg	330	39.77	B016320	BR	06/23/2011	06/27/2011
Carbazole	330U	µg/Kg	330	27.88	B016320	BR	06/23/2011	06/27/2011
Chrysene	330U	µg/Kg	330	45.17	B016320	BR	06/23/2011	06/27/2011
Dibenz[a,h]anthracene	330U	µg/Kg	330	63.76	B016320	BR	06/23/2011	06/27/2011
Dibenzofuran	330U	µg/Kg	330	20.39	B016320	BR	06/23/2011	06/27/2011
Diethyl phthalate	330U	µg/Kg	330	33.98	B016320	BR	06/23/2011	06/27/2011
Dimethyl phthalate	330U	µg/Kg	330	24.58	B016320	BR	06/23/2011	06/27/2011
Di-n-butyl phthalate	330U	µg/Kg	330	35.68	B016320	BR	06/23/2011	06/27/2011
Di-n-octyl phthalate	330U	µg/Kg	330	56.76	B016320	BR	06/23/2011	06/27/2011
Fluoranthene	330U	µg/Kg	330	30.78	B016320	BR	06/23/2011	06/27/2011
Fluorene	330U	µg/Kg	330	25.38	B016320	BR	06/23/2011	06/27/2011
Hexachlorobenzene	1100D	µg/Kg	330	31.479	B016320	BR	06/23/2011	06/27/2011
Hexachlorobutadiene	650D	µg/Kg	330	20.19	B016320	BR	06/23/2011	06/27/2011
Hexachlorocyclopentadiene	330U	µg/Kg	330	25.08	B016320	BR	06/23/2011	06/27/2011
Hexachloroethane	330U	µg/Kg	330	23.58	B016320	BR	06/23/2011	06/27/2011
Indeno[1,2,3cd]pyrene	330U	µg/Kg	330	67.16	B016320	BR	06/23/2011	06/27/2011
Isophorone	330U	µg/Kg	330	19.29	B016320	BR	06/23/2011	06/27/2011
Naphthalene	330U	µg/Kg	330	17.29	B016320	BR	06/23/2011	06/27/2011
Nitrobenzene	330U	µg/Kg	330	19.29	B016320	BR	06/23/2011	06/27/2011
N-Nitrosodimethylamine	330U	µg/Kg	330	74.35	B016320	BR	06/23/2011	06/27/2011
N-Nitrosodi-n-propylamine	330U	µg/Kg	330	23.58	B016320	BR	06/23/2011	06/27/2011
N-Nitrosodiphenylamine	330U	µg/Kg	330	21.99	B016320	BR	06/23/2011	06/27/2011
Pentachlorophenol	1600U	µg/Kg	1600	43.97	B016320	BR	06/23/2011	06/27/2011
Phenanthrene	330U	µg/Kg	330	19.59	B016320	BR	06/23/2011	06/27/2011
Phenol	330U	µg/Kg	330	23.08	B016320	BR	06/23/2011	06/27/2011
Pyrene	330U	µg/Kg	330	40.07	B016320	BR	06/23/2011	06/27/2011
Pyridine	330U	µg/Kg	330	103.93	B016320	BR	06/23/2011	06/27/2011
Total Cresol	330J	µg/Kg	330	20.89	B016320	BR	06/23/2011	06/27/2011
Surrogate: 2,4,6-Tribromophenol			89.0 %	13.9-145	B016320	06/23/2011	06/27/2011	SW-846 8270C
Surrogate: 2-Fluorobiphenyl			45.9 %	28.1-110	B016320	06/23/2011	06/27/2011	SW-846 8270C
Surrogate: 2-Fluorophenol			68.1 %	24.5-110	B016320	06/23/2011	06/27/2011	SW-846 8270C

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Erie Division

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Work Order Number:

11F3016

O & M, Inc.

450 Montbrook Lane
Knoxville TN, 37919

Project Number: Fields Brook
Project Manager: Valerie A. Rule, P.E.

Reported:
08/18/2011 13:45

6-16-11-2

11F3016-02 (Solid)

Analyte	Result	Units	Reporting Limit	MDL	Batch	Analyst	Prepared	Analyzed
8270		Method: SW-846 8270C						
<i>Surrogate: Nitrobenzene-d5</i>	55.6 %		33.6-110		B016320 06/23/2011	06/27/2011		<i>SW-846 8270C</i>
<i>Surrogate: Phenol-d5</i>	81.3 %		29.6-110		B016320 06/23/2011	06/27/2011		<i>SW-846 8270C</i>
<i>Surrogate: Terphenyl-d14</i>	45.6 %		35.8-121		B016320 06/23/2011	06/27/2011		<i>SW-846 8270C</i>

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Knoxville TN, 37919

Project Number: Fields Brook

Project Manager: Valerie A. Rule, P.E.

Reported:

08/18/2011 13:45

6-16-11-2

11F3016-02RE1 (Solid)

Analyte	Result	Units	Reporting Limit	MDL	Batch	Analyst	Prepared	Analyzed
8260								Method: SW-846 8260B
Acetone	2600DE	µg/Kg	450	87.27	B016588	JLN	06/30/2011	06/30/2011
Tetrachloroethene	850D	µg/Kg	45	14.55	B016588	JLN	06/30/2011	06/30/2011

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Knoxville TN, 37919

Project Number: Fields Brook
Project Manager: Valerie A. Rule, P.E.

Reported:
08/18/2011 13:45

6-16-11-3

11F3016-03 (Solid)

Analyte	Result	Units	Reporting Limit	MDL	Batch	Analyst	Prepared	Analyzed
8260		Method: SW-846 8260B						
1,1,1,2-Tetrachloroethane	10U	µg/Kg	10	0.6	B016317	BR	06/23/2011	06/23/2011
1,1,1-Trichloroethane	5.0U	µg/Kg	5.0	1	B016317	BR	06/23/2011	06/23/2011
1,1,2,2-Tetrachloroethane	5.0U	µg/Kg	5.0	1.4	B016317	BR	06/23/2011	06/23/2011
1,1,2-Trichloroethane	5.0U	µg/Kg	5.0	0.8	B016317	BR	06/23/2011	06/23/2011
1,1-Dichloroethane	5.0U	µg/Kg	5.0	0.7	B016317	BR	06/23/2011	06/23/2011
1,1-Dichloroethene	5.0U	µg/Kg	5.0	1.2	B016317	BR	06/23/2011	06/23/2011
1,2-Dichloroethane	5.0U	µg/Kg	5.0	1.2	B016317	BR	06/23/2011	06/23/2011
1,2-Dichloropropane	5.0U	µg/Kg	5.0	1	B016317	BR	06/23/2011	06/23/2011
2-Butanone	14	µg/Kg	10	3.6	B016317	BR	06/23/2011	06/23/2011
2-Hexanone	10U	µg/Kg	10	2.4	B016317	BR	06/23/2011	06/23/2011
4-Methyl-2-Pentanone	10U	µg/Kg	10	1.7	B016317	BR	06/23/2011	06/23/2011
Acetone	80	µg/Kg	50	9.6	B016317	BR	06/23/2011	06/23/2011
Acrolein	100U	µg/Kg	100	15.8	B016317	BR	06/23/2011	06/23/2011
Acrylonitrile	100U	µg/Kg	100	13	B016317	BR	06/23/2011	06/23/2011
Benzene	5.0U	µg/Kg	5.0	1.2	B016317	BR	06/23/2011	06/23/2011
Bromodichloromethane	5.0U	µg/Kg	5.0	0.5	B016317	BR	06/23/2011	06/23/2011
Bromoform	5.0U	µg/Kg	5.0	0.7	B016317	BR	06/23/2011	06/23/2011
Bromomethane	10U	µg/Kg	10	3.6	B016317	BR	06/23/2011	06/23/2011
Carbon Disulfide	10J	µg/Kg	10	1.7	B016317	BR	06/23/2011	06/23/2011
Carbon tetrachloride	5.0U	µg/Kg	5.0	1.2	B016317	BR	06/23/2011	06/23/2011
Chlorobenzene	5.0U	µg/Kg	5.0	0.6	B016317	BR	06/23/2011	06/23/2011
Chloroethane	10U	µg/Kg	10	2.4	B016317	BR	06/23/2011	06/23/2011
Chloroform	5.0U	µg/Kg	5.0	0.6	B016317	BR	06/23/2011	06/23/2011
Chloromethane	10U	µg/Kg	10	1.5	B016317	BR	06/23/2011	06/23/2011
cis-1,2-Dichloroethene	5.0J	µg/Kg	5.0	0.8	B016317	BR	06/23/2011	06/23/2011
cis-1,3-Dichloropropene	5.0U	µg/Kg	5.0	0.8	B016317	BR	06/23/2011	06/23/2011
Dibromochloromethane	5.0U	µg/Kg	5.0	0.8	B016317	BR	06/23/2011	06/23/2011
Ethylbenzene	5.0U	µg/Kg	5.0	0.7	B016317	BR	06/23/2011	06/23/2011
m,p-Xylene	5.0U	µg/Kg	5.0	1.6	B016317	BR	06/23/2011	06/23/2011
Methylene chloride	20U	µg/Kg	20	8.70	B016317	BR	06/23/2011	06/23/2011
Methyl-t-Butyl Ether	5.0U	µg/Kg	5.0	0.6	B016317	BR	06/23/2011	06/23/2011

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CERTIFICATE OF ANALYSIS

Work Order Number:

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O & M, Inc.

450 Montbrook Lane
Knoxville TN, 37919

Project Number: Fields Brook

Project Manager: Valerie A. Rule, P.E.

Reported:

08/18/2011 13:45

6-16-11-3

11F3016-03 (Solid)

Analyte	Result	Units	Reporting Limit	MDL	Batch	Analyst	Prepared	Analyzed
8260		Method: SW-846 8260B						
o-Xylene	5.0U	µg/Kg	5.0	0.9	B016317	BR	06/23/2011	06/23/2011
Styrene	5.0U	µg/Kg	5.0	0.8	B016317	BR	06/23/2011	06/23/2011
Tetrachloroethene	5.0U	µg/Kg	5.0	1.6	B016317	BR	06/23/2011	06/23/2011
Toluene	5.0J	µg/Kg	5.0	0.7	B016317	BR	06/23/2011	06/23/2011
trans-1,2-Dichloroethene	5.0U	µg/Kg	5.0	1	B016317	BR	06/23/2011	06/23/2011
trans-1,3-Dichloropropene	5.0U	µg/Kg	5.0	0.7	B016317	BR	06/23/2011	06/23/2011
Trichloroethene	5.0J	µg/Kg	5.0	0.9	B016317	BR	06/23/2011	06/23/2011
Trichlorofluoromethane	10U	µg/Kg	10	3.4	B016317	BR	06/23/2011	06/23/2011
Vinyl Acetate	10U	µg/Kg	10	1.5	B016317	BR	06/23/2011	06/23/2011
Vinyl chloride	10U	µg/Kg	10	1.7	B016317	BR	06/23/2011	06/23/2011
Total 1,2-Dichloroethene	10J	µg/Kg	10	0.8	B016317	BR	06/23/2011	06/23/2011
Total Xylenes	5.0U	µg/Kg	5.0	0.9	B016317	BR	06/23/2011	06/23/2011
<i>Surrogate: 1,2-Dichloroethane-d4</i>			113 %	51.7-162	B016317	06/23/2011	06/23/2011	SW-846 8260B
<i>Surrogate: 4-Bromofluorobenzene</i>			238 %	57.4-135	B016317	06/23/2011	06/23/2011	SW-846 8260B
<i>Surrogate: Dibromofluoromethane</i>			108 %	63.5-139	B016317	06/23/2011	06/23/2011	SW-846 8260B
<i>Surrogate: Toluene-d8</i>			108 %	66.6-143	B016317	06/23/2011	06/23/2011	SW-846 8260B
8270		Method: SW-846 8270C						
1,2,4-Trichlorobenzene	330U	µg/Kg	330	23.88	B016320	BR	06/23/2011	06/27/2011
1,2-Dichlorobenzene	330U	µg/Kg	330	19.39	B016320	BR	06/23/2011	06/27/2011
1,2-Diphenyl-hydrazine	330U	µg/Kg	330	20.79	B016320	BR	06/23/2011	06/27/2011
1,3-Dichlorobenzene	330U	µg/Kg	330	20.09	B016320	BR	06/23/2011	06/27/2011
1,4-Dichlorobenzene	330U	µg/Kg	330	12.39	B016320	BR	06/23/2011	06/27/2011
2,2'-oxybis(1-chloropropane)	330U	µg/Kg	330	16.489	B016320	BR	06/23/2011	06/27/2011
2,4,5-Trichlorophenol	330U	µg/Kg	330	59.16	B016320	BR	06/23/2011	06/27/2011
2,4,6-Trichlorophenol	330U	µg/Kg	330	36.58	B016320	BR	06/23/2011	06/27/2011
2,4-Dichlorophenol	330U	µg/Kg	330	29.08	B016320	BR	06/23/2011	06/27/2011
2,4-Dimethylphenol	330U	µg/Kg	330	29.78	B016320	BR	06/23/2011	06/27/2011
2,4-Dinitrophenol	1600U	µg/Kg	1600	309.79	B016320	BR	06/23/2011	06/27/2011
2,4-Dinitrotoluene	330U	µg/Kg	330	37.18	B016320	BR	06/23/2011	06/27/2011
2,6-Dichlorophenol	330U	µg/Kg	330	23.58	B016320	BR	06/23/2011	06/27/2011

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CERTIFICATE OF ANALYSIS

Work Order Number:

11F3016

O & M, Inc.

450 Montbrook Lane
Knoxville TN, 37919

Project Number: Fields Brook
Project Manager: Valerie A. Rule, P.E.

Reported:
08/18/2011 13:45

6-16-11-3

11F3016-03 (Solid)

Analyte	Result	Units	Reporting Limit	MDL	Batch	Analyst	Prepared	Analyzed
8270		Method: SW-846 8270C						
2,6-Dinitrotoluene	330U	µg/Kg	330	36.48	B016320	BR	06/23/2011	06/27/2011
2-Chloronaphthalene	330U	µg/Kg	330	60.36	B016320	BR	06/23/2011	06/27/2011
2-Chlorophenol	330U	µg/Kg	330	23.58	B016320	BR	06/23/2011	06/27/2011
2-Methylnaphthalene	330U	µg/Kg	330	20.89	B016320	BR	06/23/2011	06/27/2011
2-Methylphenol	330U	µg/Kg	330	20.89	B016320	BR	06/23/2011	06/27/2011
2-Nitroaniline	1600U	µg/Kg	1600	51.37	B016320	BR	06/23/2011	06/27/2011
2-Nitrophenol	330U	µg/Kg	330	31.479	B016320	BR	06/23/2011	06/27/2011
3,3'-Dichlorobenzidine	1600U	µg/Kg	1600	43.37	B016320	BR	06/23/2011	06/27/2011
3/4-Methylphenol	330U	µg/Kg	330	24.68	B016320	BR	06/23/2011	06/27/2011
3-Nitroaniline	330U	µg/Kg	330	43.17	B016320	BR	06/23/2011	06/27/2011
4,6-Dinitro-2-methylphenol	1600U	µg/Kg	1600	43.07	B016320	BR	06/23/2011	06/27/2011
4-Bromophenyl phenyl ether	330U	µg/Kg	330	22.88	B016320	BR	06/23/2011	06/27/2011
4-Chloro-3-methylphenol	660U	µg/Kg	660	49.17	B016320	BR	06/23/2011	06/27/2011
4-Chloroaniline	330U	µg/Kg	330	33.08	B016320	BR	06/23/2011	06/27/2011
4-Chlorophenyl phenyl ether	330U	µg/Kg	330	21.39	B016320	BR	06/23/2011	06/27/2011
4-Nitroaniline	1600U	µg/Kg	1600	57.86	B016320	BR	06/23/2011	06/27/2011
4-Nitrophenol	1600U	µg/Kg	1600	291.81	B016320	BR	06/23/2011	06/27/2011
Acenaphthene	330U	µg/Kg	330	25.68	B016320	BR	06/23/2011	06/27/2011
Acenaphthylene	330U	µg/Kg	330	18.09	B016320	BR	06/23/2011	06/27/2011
Acetophenone	330U	µg/Kg	330	21.39	B016320	BR	06/23/2011	06/27/2011
Aniline	330U	µg/Kg	330	28.98	B016320	BR	06/23/2011	06/27/2011
Anthracene	330U	µg/Kg	330	20.79	B016320	BR	06/23/2011	06/27/2011
Benzidine	1600U	µg/Kg	1600	1,420.053	B016320	BR	06/23/2011	06/27/2011
Benzo[a]anthracene	330U	µg/Kg	330	44.47	B016320	BR	06/23/2011	06/27/2011
Benzo[a]pyrene	330U	µg/Kg	330	68.65	B016320	BR	06/23/2011	06/27/2011
Benzo[b]fluoranthene	330U	µg/Kg	330	64.66	B016320	BR	06/23/2011	06/27/2011
Benzo[g,h,i]perylene	330U	µg/Kg	330	82.64	B016320	BR	06/23/2011	06/27/2011
Benzo[k]fluoranthene	330U	µg/Kg	330	93.64	B016320	BR	06/23/2011	06/27/2011
Benzoic acid	1600U	µg/Kg	1600	319.79	B016320	BR	06/23/2011	06/27/2011
Benzyl alcohol	660U	µg/Kg	660	31.88	B016320	BR	06/23/2011	06/27/2011
Bis(2-chloroethoxy)methane	330U	µg/Kg	330	21.99	B016320	BR	06/23/2011	06/27/2011

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CERTIFICATE OF ANALYSIS

Work Order Number:

11F3016

O & M, Inc.

450 Montbrook Lane
Knoxville TN, 37919

Project Number: Fields Brook

Project Manager: Valerie A. Rule, P.E.

Reported:

08/18/2011 13:45

6-16-11-3

11F3016-03 (Solid)

Analyte	Result	Units	Reporting Limit	MDL	Batch	Analyst	Prepared	Analyzed
8270		Method: SW-846 8270C						
Bis(2-chloroethyl)ether	330U	µg/Kg	330	20.89	B016320	BR	06/23/2011	06/27/2011
Bis(2-ethylhexyl)phthalate	330U	µg/Kg	330	47.27	B016320	BR	06/23/2011	06/27/2011
Butyl benzyl phthalate	330U	µg/Kg	330	39.77	B016320	BR	06/23/2011	06/27/2011
Carbazole	330U	µg/Kg	330	27.88	B016320	BR	06/23/2011	06/27/2011
Chrysene	330U	µg/Kg	330	45.17	B016320	BR	06/23/2011	06/27/2011
Dibenz[a,h]anthracene	330U	µg/Kg	330	63.76	B016320	BR	06/23/2011	06/27/2011
Dibenzofuran	330U	µg/Kg	330	20.39	B016320	BR	06/23/2011	06/27/2011
Diethyl phthalate	330U	µg/Kg	330	33.98	B016320	BR	06/23/2011	06/27/2011
Dimethyl phthalate	330U	µg/Kg	330	24.58	B016320	BR	06/23/2011	06/27/2011
Di-n-butyl phthalate	330U	µg/Kg	330	35.68	B016320	BR	06/23/2011	06/27/2011
Di-n-octyl phthalate	330U	µg/Kg	330	56.76	B016320	BR	06/23/2011	06/27/2011
Fluoranthene	330U	µg/Kg	330	30.78	B016320	BR	06/23/2011	06/27/2011
Fluorene	330U	µg/Kg	330	25.38	B016320	BR	06/23/2011	06/27/2011
Hexachlorobenzene	330U	µg/Kg	330	31.479	B016320	BR	06/23/2011	06/27/2011
Hexachlorobutadiene	330U	µg/Kg	330	20.19	B016320	BR	06/23/2011	06/27/2011
Hexachlorocyclopentadiene	330U	µg/Kg	330	25.08	B016320	BR	06/23/2011	06/27/2011
Hexachloroethane	330U	µg/Kg	330	23.58	B016320	BR	06/23/2011	06/27/2011
Indeno[1,2,3cd]pyrene	330U	µg/Kg	330	67.16	B016320	BR	06/23/2011	06/27/2011
Isophorone	330U	µg/Kg	330	19.29	B016320	BR	06/23/2011	06/27/2011
Naphthalene	330U	µg/Kg	330	17.29	B016320	BR	06/23/2011	06/27/2011
Nitrobenzene	330U	µg/Kg	330	19.29	B016320	BR	06/23/2011	06/27/2011
N-Nitrosodimethylamine	330U	µg/Kg	330	74.35	B016320	BR	06/23/2011	06/27/2011
N-Nitrosodi-n-propylamine	330U	µg/Kg	330	23.58	B016320	BR	06/23/2011	06/27/2011
N-Nitrosodiphenylamine	330J	µg/Kg	330	21.99	B016320	BR	06/23/2011	06/27/2011
Pentachlorophenol	1600U	µg/Kg	1600	43.97	B016320	BR	06/23/2011	06/27/2011
Phenanthrene	330J	µg/Kg	330	19.59	B016320	BR	06/23/2011	06/27/2011
Phenol	330U	µg/Kg	330	23.08	B016320	BR	06/23/2011	06/27/2011
Pyrene	330J	µg/Kg	330	40.07	B016320	BR	06/23/2011	06/27/2011
Pyridine	330U	µg/Kg	330	103.93	B016320	BR	06/23/2011	06/27/2011
Total Cresol	330U	µg/Kg	330	20.89	B016320	BR	06/23/2011	06/27/2011

Surrogate: 2,4,6-Tribromophenol

86.1 %

13.9-145

B016320 06/23/2011 06/27/2011

SW-846 8270C

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CERTIFICATE OF ANALYSIS

Work Order Number:

11F3016

O & M, Inc.

450 Montbrook Lane
Knoxville TN, 37919

Project Number: Fields Brook
Project Manager: Valerie A. Rule, P.E.

Reported:
08/18/2011 13:45

6-16-11-3

11F3016-03 (Solid)

Analyte	Result	Units	Reporting Limit	MDL	Batch	Analyst	Prepared	Analyzed
8270		Method: SW-846 8270C						
Surrogate: 2-Fluorobiphenyl	43.2 %	28.1-110	B016320 06/23/2011	06/27/2011			SW-846 8270C	
Surrogate: 2-Fluorophenol	50.8 %	24.5-110	B016320 06/23/2011	06/27/2011			SW-846 8270C	
Surrogate: Nitrobenzene-d5	44.8 %	33.6-110	B016320 06/23/2011	06/27/2011			SW-846 8270C	
Surrogate: Phenol-d5	62.6 %	29.6-110	B016320 06/23/2011	06/27/2011			SW-846 8270C	
Surrogate: Terphenyl-d14	45.7 %	35.8-121	B016320 06/23/2011	06/27/2011			SW-846 8270C	

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Knoxville TN, 37919

Project Number: Fields Brook
Project Manager: Valerie A. Rule, P.E.

Reported:
08/18/2011 13:45

6-16-11-4

11F3016-04 (Water)

Analyte	Result	Units	Reporting Limit	MDL	Batch	Analyst	Prepared	Analyzed
Method: SW-846 8260B								
8260								
1,1,1,2-Tetrachloroethane	10U	µg/L	10	1.1	B016531	JLN	06/29/2011	06/29/2011
1,1,1-Trichloroethane	5.0J	µg/L	5.0	0.9	B016531	JLN	06/29/2011	06/29/2011
1,1,2,2-Tetrachloroethane	5.0J	µg/L	5.0	1.4	B016531	JLN	06/29/2011	06/29/2011
1,1,2-Trichloroethane	5.0U	µg/L	5.0	0.9	B016531	JLN	06/29/2011	06/29/2011
1,1-Dichloroethane	5.0U	µg/L	5.0	0.8	B016531	JLN	06/29/2011	06/29/2011
1,1-Dichloroethene	5.0U	µg/L	5.0	1.7	B016531	JLN	06/29/2011	06/29/2011
1,2-Dichloroethane	5.0U	µg/L	5.0	1.2	B016531	JLN	06/29/2011	06/29/2011
1,2-Dichloropropane	5.0U	µg/L	5.0	1	B016531	JLN	06/29/2011	06/29/2011
2-Butanone	10U	µg/L	10	3.6	B016531	JLN	06/29/2011	06/29/2011
2-Hexanone	10U	µg/L	10	2.4	B016531	JLN	06/29/2011	06/29/2011
4-Methyl-2-Pentanone	10U	µg/L	10	1.7	B016531	JLN	06/29/2011	06/29/2011
Acetone	50U	µg/L	50	5.8	B016531	JLN	06/29/2011	06/29/2011
Acrolein	100U	µg/L	100	15.8	B016531	JLN	06/29/2011	06/29/2011
Acrylonitrile	100U	µg/L	100	13	B016531	JLN	06/29/2011	06/29/2011
Benzene	5.0U	µg/L	5.0	0.8	B016531	JLN	06/29/2011	06/29/2011
Bromodichloromethane	5.0U	µg/L	5.0	0.7	B016531	JLN	06/29/2011	06/29/2011
Bromoform	5.0U	µg/L	5.0	0.8	B016531	JLN	06/29/2011	06/29/2011
Bromomethane	10U	µg/L	10	1.8	B016531	JLN	06/29/2011	06/29/2011
Carbon Disulfide	10U	µg/L	10	1.7	B016531	JLN	06/29/2011	06/29/2011
Carbon tetrachloride	5.0U	µg/L	5.0	1.7	B016531	JLN	06/29/2011	06/29/2011
Chlorobenzene	5.0U	µg/L	5.0	0.8	B016531	JLN	06/29/2011	06/29/2011
Chloroethane	10U	µg/L	10	2.30	B016531	JLN	06/29/2011	06/29/2011
Chloroform	5.0U	µg/L	5.0	0.9	B016531	JLN	06/29/2011	06/29/2011
Chloromethane	10U	µg/L	10	1	B016531	JLN	06/29/2011	06/29/2011
cis-1,2-Dichloroethene	7.4	µg/L	5.0	0.8	B016531	JLN	06/29/2011	06/29/2011
cis-1,3-Dichloropropene	5.0U	µg/L	5.0	0.8	B016531	JLN	06/29/2011	06/29/2011
Dibromochloromethane	5.0U	µg/L	5.0	0.8	B016531	JLN	06/29/2011	06/29/2011
Ethylbenzene	5.0U	µg/L	5.0	0.9	B016531	JLN	06/29/2011	06/29/2011
m,p-Xylene	5.0U	µg/L	5.0	1.7	B016531	JLN	06/29/2011	06/29/2011
Methylene chloride	10U	µg/L	10	3.1	B016531	JLN	06/29/2011	06/29/2011
Methyl-t-Butyl Ether	5.0U	µg/L	5.0	0.8	B016531	JLN	06/29/2011	06/29/2011

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11F3016

O & M, Inc.

450 Montbrook Lane
Knoxville TN, 37919

Project Number: Fields Brook
Project Manager: Valerie A. Rule, P.E.

Reported:
08/18/2011 13:45

6-16-11-4

11F3016-04 (Water)

Analyte	Result	Units	Reporting Limit	MDL	Batch	Analyst	Prepared	Analyzed
8260 Method: SW-846 8260B								
o-Xylene	5.0U	µg/L	5.0	0.9	B016531	JLN	06/29/2011	06/29/2011
Styrene	5.0U	µg/L	5.0	0.7	B016531	JLN	06/29/2011	06/29/2011
Tetrachloroethene	5.0U	µg/L	5.0	1.3	B016531	JLN	06/29/2011	06/29/2011
Toluene	5.0U	µg/L	5.0	0.9	B016531	JLN	06/29/2011	06/29/2011
trans-1,2-Dichloroethene	5.0U	µg/L	5.0	1.1	B016531	JLN	06/29/2011	06/29/2011
trans-1,3-Dichloropropene	5.0U	µg/L	5.0	0.7	B016531	JLN	06/29/2011	06/29/2011
Trichloroethene	5.0J	µg/L	5.0	0.9	B016531	JLN	06/29/2011	06/29/2011
Trichlorofluoromethane	10U	µg/L	10	1.1	B016531	JLN	06/29/2011	06/29/2011
Vinyl Acetate	10U	µg/L	10	1.5	B016531	JLN	06/29/2011	06/29/2011
Vinyl chloride	2.0J	µg/L	2.0	0.9	B016531	JLN	06/29/2011	06/29/2011
Total 1,2-Dichloroethene	7.4	µg/L	5.0	0.8	B016531	JLN	06/29/2011	06/29/2011
Total Xylenes	5.0U	µg/L	5.0	0.9	B016531	JLN	06/29/2011	06/29/2011
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>108 %</i>	<i>74.5-132</i>			<i>B016531 06/29/2011</i>	<i>06/29/2011</i>	<i>SW-846 8260B</i>	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>104 %</i>	<i>80-120</i>			<i>B016531 06/29/2011</i>	<i>06/29/2011</i>	<i>SW-846 8260B</i>	
<i>Surrogate: Dibromofluoromethane</i>	<i>105 %</i>	<i>80-120</i>			<i>B016531 06/29/2011</i>	<i>06/29/2011</i>	<i>SW-846 8260B</i>	
<i>Surrogate: Toluene-d8</i>	<i>97.7 %</i>	<i>80-120</i>			<i>B016531 06/29/2011</i>	<i>06/29/2011</i>	<i>SW-846 8260B</i>	

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Knoxville TN, 37919

Project Number: Fields Brook

Project Manager: Valerie A. Rule, P.E.

Reported:

08/18/2011 13:45

6-16-11-5

11F3016-05 (Water)

Analyte	Result	Units	Reporting Limit	MDL	Batch	Analyst	Prepared	Analyzed
Method: SW-846 8260B								
1,1,1,2-Tetrachloroethane	10U	µg/L	10	1.1	B016531	JLN	06/29/2011	06/29/2011
1,1,1-Trichloroethane	5.0U	µg/L	5.0	0.9	B016531	JLN	06/29/2011	06/29/2011
1,1,2-Trichloroethane	5.0J	µg/L	5.0	0.9	B016531	JLN	06/29/2011	06/29/2011
1,1-Dichloroethane	5.0U	µg/L	5.0	0.8	B016531	JLN	06/29/2011	06/29/2011
1,1-Dichloroethene	5.0U	µg/L	5.0	1.7	B016531	JLN	06/29/2011	06/29/2011
1,2-Dichloroethane	5.0U	µg/L	5.0	1.2	B016531	JLN	06/29/2011	06/29/2011
1,2-Dichloropropane	5.0U	µg/L	5.0	1	B016531	JLN	06/29/2011	06/29/2011
2-Butanone	10U	µg/L	10	3.6	B016531	JLN	06/29/2011	06/29/2011
2-Hexanone	10U	µg/L	10	2.4	B016531	JLN	06/29/2011	06/29/2011
4-Methyl-2-Pentanone	10U	µg/L	10	1.7	B016531	JLN	06/29/2011	06/29/2011
Acetone	50U	µg/L	50	5.8	B016531	JLN	06/29/2011	06/29/2011
Acrolein	100U	µg/L	100	15.8	B016531	JLN	06/29/2011	06/29/2011
Acrylonitrile	100U	µg/L	100	13	B016531	JLN	06/29/2011	06/29/2011
Benzene	5.0U	µg/L	5.0	0.8	B016531	JLN	06/29/2011	06/29/2011
Bromodichloromethane	5.0U	µg/L	5.0	0.7	B016531	JLN	06/29/2011	06/29/2011
Bromoform	5.0U	µg/L	5.0	0.8	B016531	JLN	06/29/2011	06/29/2011
Bromomethane	10U	µg/L	10	1.8	B016531	JLN	06/29/2011	06/29/2011
Carbon Disulfide	10U	µg/L	10	1.7	B016531	JLN	06/29/2011	06/29/2011
Carbon tetrachloride	5.0U	µg/L	5.0	1.7	B016531	JLN	06/29/2011	06/29/2011
Chlorobenzene	5.0U	µg/L	5.0	0.8	B016531	JLN	06/29/2011	06/29/2011
Chloroethane	10U	µg/L	10	2.30	B016531	JLN	06/29/2011	06/29/2011
Chloroform	5.0J	µg/L	5.0	0.9	B016531	JLN	06/29/2011	06/29/2011
Chloromethane	10U	µg/L	10	1	B016531	JLN	06/29/2011	06/29/2011
cis-1,2-Dichloroethene	110	µg/L	5.0	0.8	B016531	JLN	06/29/2011	06/29/2011
cis-1,3-Dichloropropene	5.0U	µg/L	5.0	0.8	B016531	JLN	06/29/2011	06/29/2011
Dibromochloromethane	5.0U	µg/L	5.0	0.8	B016531	JLN	06/29/2011	06/29/2011
Ethylbenzene	5.0U	µg/L	5.0	0.9	B016531	JLN	06/29/2011	06/29/2011
m,p-Xylene	5.0U	µg/L	5.0	1.7	B016531	JLN	06/29/2011	06/29/2011
Methylene chloride	10U	µg/L	10	3.1	B016531	JLN	06/29/2011	06/29/2011
Methyl-t-Butyl Ether	5.0U	µg/L	5.0	0.8	B016531	JLN	06/29/2011	06/29/2011
o-Xylene	5.0U	µg/L	5.0	0.9	B016531	JLN	06/29/2011	06/29/2011

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CERTIFICATE OF ANALYSIS

Work Order Number:

11F3016

O & M, Inc.

450 Montbrook Lane
Knoxville TN, 37919

Project Number: Fields Brook
Project Manager: Valerie A. Rule, P.E.

Reported:
08/18/2011 13:45

6-16-11-5

11F3016-05 (Water)

Analyte	Result	Units	Reporting Limit	MDL	Batch	Analyst	Prepared	Analyzed
8260								Method: SW-846 8260B
Styrene	5.0U	µg/L	5.0	0.7	B016531	JLN	06/29/2011	06/29/2011
Tetrachloroethene	28	µg/L	5.0	1.3	B016531	JLN	06/29/2011	06/29/2011
Toluene	5.0U	µg/L	5.0	0.9	B016531	JLN	06/29/2011	06/29/2011
trans-1,2-Dichloroethene	9.5	µg/L	5.0	1.1	B016531	JLN	06/29/2011	06/29/2011
trans-1,3-Dichloropropene	5.0U	µg/L	5.0	0.7	B016531	JLN	06/29/2011	06/29/2011
Trichlorofluoromethane	10U	µg/L	10	1.1	B016531	JLN	06/29/2011	06/29/2011
Vinyl Acetate	10U	µg/L	10	1.5	B016531	JLN	06/29/2011	06/29/2011
Vinyl chloride	2.9	µg/L	2.0	0.9	B016531	JLN	06/29/2011	06/29/2011
Total 1,2-Dichloroethene	120	µg/L	5.0	0.8	B016531	JLN	06/29/2011	06/29/2011
Total Xylenes	5.0U	µg/L	5.0	0.9	B016531	JLN	06/29/2011	06/29/2011
Surrogate: 1,2-Dichloroethane-d4	107 %		74.5-132		B016531 06/29/2011	06/29/2011		SW-846 8260B
Surrogate: 4-Bromo fluoro benzene	104 %		80-120		B016531 06/29/2011	06/29/2011		SW-846 8260B
Surrogate: Dibromo fluoro methane	105 %		80-120		B016531 06/29/2011	06/29/2011		SW-846 8260B
Surrogate: Toluene-d8	98.6 %		80-120		B016531 06/29/2011	06/29/2011		SW-846 8260B

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CERTIFICATE OF ANALYSIS

Work Order Number:

11F3016

O & M, Inc.

450 Montbrook Lane
Knoxville TN. 37919

Project Number:Fields Brook

Project Manager: Valerie A. Rule, P.E.

Reported:

08/18/2011 13:45

6-16-11-5

11F3016-05RE1 (Water)

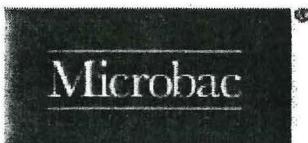
Analyte	Result	Units	Reporting					
			Limit	MDL	Batch	Analyst	Prepared	Analyzed
Method: SW-846 8260B								
1,1,2,2-Tetrachloroethane	480D	µg/L	50	14	B016531	JLN	06/29/2011	06/29/2011
Trichloroethene	190D	µg/L	50	9	B016531	JLN	06/29/2011	06/29/2011

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The logo consists of the word "MEMBER" in a bold, black, sans-serif font above a larger, bold, black, sans-serif font containing the acronym "ACT".



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CERTIFICATE OF ANALYSIS

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11F3016

O & M, Inc.

450 Montbrook Lane
Knoxville TN, 37919

Project Number: Fields Brook
Project Manager: Valerie A. Rule, P.E.

Reported:
08/18/2011 13:45

6-16-11-6

11F3016-06 (Water)

Analyte	Result	Units	Reporting Limit	MDL	Batch	Analyst	Prepared	Analyzed
8260 Method: SW-846 8260B								
1,1,1,2-Tetrachloroethane	10U	µg/L	10	1.1	B016531	JLN	06/29/2011	06/29/2011
1,1,1-Trichloroethane	5.0U	µg/L	5.0	0.9	B016531	JLN	06/29/2011	06/29/2011
1,1,2-Trichloroethane	45	µg/L	5.0	0.9	B016531	JLN	06/29/2011	06/29/2011
1,1-Dichloroethane	5.0U	µg/L	5.0	0.8	B016531	JLN	06/29/2011	06/29/2011
1,1-Dichloroethene	8.8	µg/L	5.0	1.7	B016531	JLN	06/29/2011	06/29/2011
1,2-Dichloroethane	5.0U	µg/L	5.0	1.2	B016531	JLN	06/29/2011	06/29/2011
1,2-Dichloropropane	5.0U	µg/L	5.0	1	B016531	JLN	06/29/2011	06/29/2011
2-Butanone	10U	µg/L	10	3.6	B016531	JLN	06/29/2011	06/29/2011
2-Hexanone	10U	µg/L	10	2.4	B016531	JLN	06/29/2011	06/29/2011
4-Methyl-2-Pentanone	10U	µg/L	10	1.7	B016531	JLN	06/29/2011	06/29/2011
Acetone	50U	µg/L	50	5.8	B016531	JLN	06/29/2011	06/29/2011
Acrolein	100U	µg/L	100	15.8	B016531	JLN	06/29/2011	06/29/2011
Acrylonitrile	100U	µg/L	100	13	B016531	JLN	06/29/2011	06/29/2011
Benzene	5.0U	µg/L	5.0	0.8	B016531	JLN	06/29/2011	06/29/2011
Bromodichloromethane	5.0U	µg/L	5.0	0.7	B016531	JLN	06/29/2011	06/29/2011
Bromoform	5.0U	µg/L	5.0	0.8	B016531	JLN	06/29/2011	06/29/2011
Bromomethane	10U	µg/L	10	1.8	B016531	JLN	06/29/2011	06/29/2011
Carbon Disulfide	10U	µg/L	10	1.7	B016531	JLN	06/29/2011	06/29/2011
Carbon tetrachloride	5.0U	µg/L	5.0	1.7	B016531	JLN	06/29/2011	06/29/2011
Chlorobenzene	5.0U	µg/L	5.0	0.8	B016531	JLN	06/29/2011	06/29/2011
Chloroethane	10U	µg/L	10	2.30	B016531	JLN	06/29/2011	06/29/2011
Chloroform	20	µg/L	5.0	0.9	B016531	JLN	06/29/2011	06/29/2011
Chloromethane	10U	µg/L	10	1	B016531	JLN	06/29/2011	06/29/2011
cis-1,3-Dichloropropene	5.0U	µg/L	5.0	0.8	B016531	JLN	06/29/2011	06/29/2011
Dibromochloromethane	5.0U	µg/L	5.0	0.8	B016531	JLN	06/29/2011	06/29/2011
Ethylbenzene	5.0U	µg/L	5.0	0.9	B016531	JLN	06/29/2011	06/29/2011
m,p-Xylene	5.0U	µg/L	5.0	1.7	B016531	JLN	06/29/2011	06/29/2011
Methylene chloride	10U	µg/L	10	3.1	B016531	JLN	06/29/2011	06/29/2011
Methyl-t-Butyl Ether	5.0U	µg/L	5.0	0.8	B016531	JLN	06/29/2011	06/29/2011
o-Xylene	5.0U	µg/L	5.0	0.9	B016531	JLN	06/29/2011	06/29/2011
Styrene	5.0U	µg/L	5.0	0.7	B016531	JLN	06/29/2011	06/29/2011

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CERTIFICATE OF ANALYSIS

Work Order Number:

11F3016

O & M, Inc.

450 Montbrook Lane
Knoxville TN, 37919

Project Number: Fields Brook
Project Manager: Valerie A. Rule, P.E.

Reported:
08/18/2011 13:45

6-16-11-6

11F3016-06 (Water)

Analyte	Result	Units	Reporting Limit	MDL	Batch	Analyst	Prepared	Analyzed
8260								Method: SW-846 8260B
Tetrachloroethene	70	µg/L	5.0	1.3	B016531	JLN	06/29/2011	06/29/2011
Toluene	5.0U	µg/L	5.0	0.9	B016531	JLN	06/29/2011	06/29/2011
trans-1,2-Dichloroethene	54	µg/L	5.0	1.1	B016531	JLN	06/29/2011	06/29/2011
trans-1,3-Dichloropropene	5.0U	µg/L	5.0	0.7	B016531	JLN	06/29/2011	06/29/2011
Trichlorofluoromethane	10U	µg/L	10	1.1	B016531	JLN	06/29/2011	06/29/2011
Vinyl Acetate	10U	µg/L	10	1.5	B016531	JLN	06/29/2011	06/29/2011
Vinyl chloride	6.4	µg/L	2.0	0.9	B016531	JLN	06/29/2011	06/29/2011
Total Xylenes	5.0U	µg/L	5.0	0.9	B016531	JLN	06/29/2011	06/29/2011
<i>Surrogate: 1,2-Dichloroethane-d4</i>	109 %		74.5-132		B016531 06/29/2011	06/29/2011		<i>SW-846 8260B</i>
<i>Surrogate: 4-Bromofluorobenzene</i>	106 %		80-120		B016531 06/29/2011	06/29/2011		<i>SW-846 8260B</i>
<i>Surrogate: Dibromofluoromethane</i>	107 %		80-120		B016531 06/29/2011	06/29/2011		<i>SW-846 8260B</i>
<i>Surrogate: Toluene-d8</i>	97.8 %		80-120		B016531 06/29/2011	06/29/2011		<i>SW-846 8260B</i>

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Work Order Number:

11F3016

O & M, Inc.
450 Montbrook Lane
Knoxville TN, 37919

Project Number: Fields Brook
Project Manager: Valerie A. Rule, P.E.

Reported:
08/18/2011 13:45

6-16-11-6

11F3016-06RE1 (Water)

Analyte	Result	Units	Reporting Limit	MDL	Batch	Analyst	Prepared	Analyzed
Method: SW-846 8260B								
1,1,2,2-Tetrachloroethane	5600D	µg/L	500	140	B016531	JLN	06/29/2011	06/29/2011
cis-1,2-Dichloroethene	820D	µg/L	500	80	B016531	JLN	06/29/2011	06/29/2011
Trichloroethene	1100D	µg/L	500	90	B016531	JLN	06/29/2011	06/29/2011
Total 1,2-Dichloroethene	820D	µg/L	500	80	B016531	JLN	06/29/2011	06/29/2011

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450 Montbrook Lane
Knoxville TN, 37919

Project Number: Fields Brook

Project Manager: Valerie A. Rule, P.E.

Reported:

08/18/2011 13:45

6-16-11-7

11F3016-07 (Water)

Analyte	Result	Units	Reporting Limit	MDL	Batch	Analyst	Prepared	Analyzed
8260		Method: SW-846 8260B						
1,1,1,2-Tetrachloroethane	10U	µg/L	10	1.1	B016531	JLN	06/29/2011	06/29/2011
1,1,1-Trichloroethane	5.0J	µg/L	5.0	0.9	B016531	JLN	06/29/2011	06/29/2011
1,1,2,2-Tetrachloroethane	5.0U	µg/L	5.0	1.4	B016531	JLN	06/29/2011	06/29/2011
1,1,2-Trichloroethane	5.0U	µg/L	5.0	0.9	B016531	JLN	06/29/2011	06/29/2011
1,1-Dichloroethane	5.0J	µg/L	5.0	0.8	B016531	JLN	06/29/2011	06/29/2011
1,1-Dichloroethene	5.0U	µg/L	5.0	1.7	B016531	JLN	06/29/2011	06/29/2011
1,2-Dichloroethane	5.0U	µg/L	5.0	1.2	B016531	JLN	06/29/2011	06/29/2011
1,2-Dichloropropane	5.0U	µg/L	5.0	1	B016531	JLN	06/29/2011	06/29/2011
2-Butanone	10U	µg/L	10	3.6	B016531	JLN	06/29/2011	06/29/2011
2-Hexanone	10U	µg/L	10	2.4	B016531	JLN	06/29/2011	06/29/2011
4-Methyl-2-Pentanone	10U	µg/L	10	1.7	B016531	JLN	06/29/2011	06/29/2011
Acetone	50U	µg/L	50	5.8	B016531	JLN	06/29/2011	06/29/2011
Acrolein	100U	µg/L	100	15.8	B016531	JLN	06/29/2011	06/29/2011
Acrylonitrile	100U	µg/L	100	13	B016531	JLN	06/29/2011	06/29/2011
Benzene	5.0U	µg/L	5.0	0.8	B016531	JLN	06/29/2011	06/29/2011
Bromodichloromethane	5.0U	µg/L	5.0	0.7	B016531	JLN	06/29/2011	06/29/2011
Bromoform	5.0U	µg/L	5.0	0.8	B016531	JLN	06/29/2011	06/29/2011
Bromomethane	10U	µg/L	10	1.8	B016531	JLN	06/29/2011	06/29/2011
Carbon Disulfide	10U	µg/L	10	1.7	B016531	JLN	06/29/2011	06/29/2011
Carbon tetrachloride	5.0U	µg/L	5.0	1.7	B016531	JLN	06/29/2011	06/29/2011
Chlorobenzene	5.0U	µg/L	5.0	0.8	B016531	JLN	06/29/2011	06/29/2011
Chloroethane	10U	µg/L	10	2.30	B016531	JLN	06/29/2011	06/29/2011
Chloroform	5.0U	µg/L	5.0	0.9	B016531	JLN	06/29/2011	06/29/2011
Chloromethane	10U	µg/L	10	1	B016531	JLN	06/29/2011	06/29/2011
cis-1,2-Dichloroethene	6.6	µg/L	5.0	0.8	B016531	JLN	06/29/2011	06/29/2011
cis-1,3-Dichloropropene	5.0U	µg/L	5.0	0.8	B016531	JLN	06/29/2011	06/29/2011
Dibromochloromethane	5.0U	µg/L	5.0	0.8	B016531	JLN	06/29/2011	06/29/2011
Ethylbenzene	5.0U	µg/L	5.0	0.9	B016531	JLN	06/29/2011	06/29/2011
m,p-Xylene	5.0U	µg/L	5.0	1.7	B016531	JLN	06/29/2011	06/29/2011
Methylene chloride	10U	µg/L	10	3.1	B016531	JLN	06/29/2011	06/29/2011
Methyl-t-Butyl Ether	5.0U	µg/L	5.0	0.8	B016531	JLN	06/29/2011	06/29/2011

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CERTIFICATE OF ANALYSIS

Work Order Number:

11F3016

O & M, Inc.

450 Montbrook Lane
Knoxville TN, 37919

Project Number: Fields Brook
Project Manager: Valerie A. Rule, P.E.

Reported:
08/18/2011 13:45

6-16-11-7

11F3016-07 (Water)

Analyte	Result	Units	Reporting Limit	MDL	Batch	Analyst	Prepared	Analyzed
8260		Method: SW-846 8260B						
o-Xylene	5.0U	µg/L	5.0	0.9	B016531	JLN	06/29/2011	06/29/2011
Styrene	5.0U	µg/L	5.0	0.7	B016531	JLN	06/29/2011	06/29/2011
Tetrachloroethene	5.0U	µg/L	5.0	1.3	B016531	JLN	06/29/2011	06/29/2011
Toluene	5.0U	µg/L	5.0	0.9	B016531	JLN	06/29/2011	06/29/2011
trans-1,2-Dichloroethene	5.0U	µg/L	5.0	1.1	B016531	JLN	06/29/2011	06/29/2011
trans-1,3-Dichloropropene	5.0U	µg/L	5.0	0.7	B016531	JLN	06/29/2011	06/29/2011
Trichloroethene	5.0U	µg/L	5.0	0.9	B016531	JLN	06/29/2011	06/29/2011
Trichlorofluoromethane	10U	µg/L	10	1.1	B016531	JLN	06/29/2011	06/29/2011
Vinyl Acetate	10U	µg/L	10	1.5	B016531	JLN	06/29/2011	06/29/2011
Vinyl chloride	2.0U	µg/L	2.0	0.9	B016531	JLN	06/29/2011	06/29/2011
Total 1,2-Dichloroethene	6.6	µg/L	5.0	0.8	B016531	JLN	06/29/2011	06/29/2011
Total Xylenes	5.0U	µg/L	5.0	0.9	B016531	JLN	06/29/2011	06/29/2011
Surrogate: 1,2-Dichloroethane-d4	109 %		74.5-132		B016531	06/29/2011	06/29/2011	SW-846 8260B
Surrogate: 4-Bromofluorobenzene	105 %		80-120		B016531	06/29/2011	06/29/2011	SW-846 8260B
Surrogate: Dibromofluoromethane	105 %		80-120		B016531	06/29/2011	06/29/2011	SW-846 8260B
Surrogate: Toluene-d8	98.5 %		80-120		B016531	06/29/2011	06/29/2011	SW-846 8260B

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CERTIFICATE OF ANALYSIS

Work Order Number:

11F3016

O & M, Inc.

450 Montbrook Lane
Knoxville TN, 37919

Project Number: Fields Brook

Project Manager: Valerie A. Rule, P.E.

Reported:

08/18/2011 13:45

6-16-11-8

11F3016-08 (Solid)

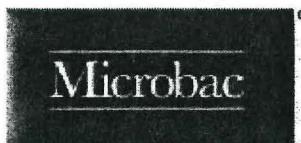
Analyte	Result	Units	Reporting Limit	MDL	Batch	Analyst	Prepared	Analyzed
8260		Method: SW-846 8260B						
1,1,1,2-Tetrachloroethane	10U	µg/Kg	10	0.6	B016317	BR	06/23/2011	06/23/2011
1,1,1-Trichloroethane	5.0U	µg/Kg	5.0	1	B016317	BR	06/23/2011	06/23/2011
1,1,2,2-Tetrachloroethane	5.0U	µg/Kg	5.0	1.4	B016317	BR	06/23/2011	06/23/2011
1,1,2-Trichloroethane	5.0U	µg/Kg	5.0	0.8	B016317	BR	06/23/2011	06/23/2011
1,1-Dichloroethane	5.0U	µg/Kg	5.0	0.7	B016317	BR	06/23/2011	06/23/2011
1,1-Dichloroethene	5.0U	µg/Kg	5.0	1.2	B016317	BR	06/23/2011	06/23/2011
1,2-Dichloroethane	5.0U	µg/Kg	5.0	1.2	B016317	BR	06/23/2011	06/23/2011
1,2-Dichloropropane	5.0U	µg/Kg	5.0	1	B016317	BR	06/23/2011	06/23/2011
2-Butanone	10J	µg/Kg	10	3.6	B016317	BR	06/23/2011	06/23/2011
2-Hexanone	10U	µg/Kg	10	2.4	B016317	BR	06/23/2011	06/23/2011
4-Methyl-2-Pentanone	10U	µg/Kg	10	1.7	B016317	BR	06/23/2011	06/23/2011
Acetone	70	µg/Kg	50	9.6	B016317	BR	06/23/2011	06/23/2011
Acrolein	100U	µg/Kg	100	15.8	B016317	BR	06/23/2011	06/23/2011
Acrylonitrile	100U	µg/Kg	100	13	B016317	BR	06/23/2011	06/23/2011
Benzene	5.0U	µg/Kg	5.0	1.2	B016317	BR	06/23/2011	06/23/2011
Bromodichloromethane	5.0U	µg/Kg	5.0	0.5	B016317	BR	06/23/2011	06/23/2011
Bromoform	5.0U	µg/Kg	5.0	0.7	B016317	BR	06/23/2011	06/23/2011
Bromomethane	10U	µg/Kg	10	3.6	B016317	BR	06/23/2011	06/23/2011
Carbon Disulfide	10J	µg/Kg	10	1.7	B016317	BR	06/23/2011	06/23/2011
Carbon tetrachloride	5.0U	µg/Kg	5.0	1.2	B016317	BR	06/23/2011	06/23/2011
Chlorobenzene	5.0U	µg/Kg	5.0	0.6	B016317	BR	06/23/2011	06/23/2011
Chloroethane	10U	µg/Kg	10	2.4	B016317	BR	06/23/2011	06/23/2011
Chloroform	5.0U	µg/Kg	5.0	0.6	B016317	BR	06/23/2011	06/23/2011
Chloromethane	10U	µg/Kg	10	1.5	B016317	BR	06/23/2011	06/23/2011
cis-1,2-Dichloroethene	5.0J	µg/Kg	5.0	0.8	B016317	BR	06/23/2011	06/23/2011
cis-1,3-Dichloropropene	5.0U	µg/Kg	5.0	0.8	B016317	BR	06/23/2011	06/23/2011
Dibromochloromethane	5.0U	µg/Kg	5.0	0.8	B016317	BR	06/23/2011	06/23/2011
Ethylbenzene	5.0U	µg/Kg	5.0	0.7	B016317	BR	06/23/2011	06/23/2011
m,p-Xylene	5.0U	µg/Kg	5.0	1.6	B016317	BR	06/23/2011	06/23/2011
Methylene chloride	20U	µg/Kg	20	8.70	B016317	BR	06/23/2011	06/23/2011
Methyl-t-Butyl Ether	5.0U	µg/Kg	5.0	0.6	B016317	BR	06/23/2011	06/23/2011

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Project Manager: Valerie A. Rule, P.E.

Reported:
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6-16-11-8

11F3016-08 (Solid)

Analyte	Result	Units	Reporting Limit	MDL	Batch	Analyst	Prepared	Analyzed
8260 Method: SW-846 8260B								
o-Xylene	5.0U	µg/Kg	5.0	0.9	B016317	BR	06/23/2011	06/23/2011
Styrene	5.0U	µg/Kg	5.0	0.8	B016317	BR	06/23/2011	06/23/2011
Tetrachloroethene	5.0J	µg/Kg	5.0	1.6	B016317	BR	06/23/2011	06/23/2011
Toluene	5.0J	µg/Kg	5.0	0.7	B016317	BR	06/23/2011	06/23/2011
trans-1,2-Dichloroethene	5.0U	µg/Kg	5.0	1	B016317	BR	06/23/2011	06/23/2011
trans-1,3-Dichloropropene	5.0U	µg/Kg	5.0	0.7	B016317	BR	06/23/2011	06/23/2011
Trichloroethene	5.0J	µg/Kg	5.0	0.9	B016317	BR	06/23/2011	06/23/2011
Trichlorofluoromethane	10U	µg/Kg	10	3.4	B016317	BR	06/23/2011	06/23/2011
Vinyl Acetate	10U	µg/Kg	10	1.5	B016317	BR	06/23/2011	06/23/2011
Vinyl chloride	10U	µg/Kg	10	1.7	B016317	BR	06/23/2011	06/23/2011
Total 1,2-Dichloroethene	10J	µg/Kg	10	0.8	B016317	BR	06/23/2011	06/23/2011
Total Xylenes	5.0U	µg/Kg	5.0	0.9	B016317	BR	06/23/2011	06/23/2011
<i>Surrogate: 1,2-Dichloroethane-d4</i>	111 %		51.7-162		B016317 06/23/2011	06/23/2011	<i>SW-846 8260B</i>	
<i>Surrogate: 4-Bromofluorobenzene</i>	119 %		57.4-135		B016317 06/23/2011	06/23/2011	<i>SW-846 8260B</i>	
<i>Surrogate: Dibromofluoromethane</i>	107 %		63.5-139		B016317 06/23/2011	06/23/2011	<i>SW-846 8260B</i>	
<i>Surrogate: Toluene-d8</i>	105 %		66.6-143		B016317 06/23/2011	06/23/2011	<i>SW-846 8260B</i>	
8270 Method: SW-846 8270C								
1,2,4-Trichlorobenzene	330U	µg/Kg	330	23.95	B016320	BR	06/23/2011	06/27/2011
1,2-Dichlorobenzene	330U	µg/Kg	330	19.44	B016320	BR	06/23/2011	06/27/2011
1,2-Diphenyl-hydrazine	330U	µg/Kg	330	20.84	B016320	BR	06/23/2011	06/27/2011
1,3-Dichlorobenzene	330U	µg/Kg	330	20.14	B016320	BR	06/23/2011	06/27/2011
1,4-Dichlorobenzene	330U	µg/Kg	330	12.42	B016320	BR	06/23/2011	06/27/2011
2,2'-oxybis(1-chloropropane)	330U	µg/Kg	330	16.53	B016320	BR	06/23/2011	06/27/2011
2,4,5-Trichlorophenol	330U	µg/Kg	330	59.32	B016320	BR	06/23/2011	06/27/2011
2,4,6-Trichlorophenol	330U	µg/Kg	330	36.67	B016320	BR	06/23/2011	06/27/2011
2,4-Dichlorophenol	330U	µg/Kg	330	29.16	B016320	BR	06/23/2011	06/27/2011
2,4-Dimethylphenol	330U	µg/Kg	330	29.86	B016320	BR	06/23/2011	06/27/2011
2,4-Dinitrophenol	1600U	µg/Kg	1600	310.62	B016320	BR	06/23/2011	06/27/2011
2,4-Dinitrotoluene	330U	µg/Kg	330	37.27	B016320	BR	06/23/2011	06/27/2011
2,6-Dichlorophenol	330U	µg/Kg	330	23.65	B016320	BR	06/23/2011	06/27/2011

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11F3016

O & M, Inc.

450 Montbrook Lane
Knoxville TN, 37919

Project Number: Fields Brook

Project Manager: Valerie A. Rule, P.E.

Reported:

08/18/2011 13:45

6-16-11-8

11F3016-08 (Solid)

Analyte	Result	Units	Reporting Limit	MDL	Batch	Analyst	Prepared	Analyzed
8270		Method: SW-846 8270C						
2,6-Dinitrotoluene	330U	µg/Kg	330	36.57	B016320	BR	06/23/2011	06/27/2011
2-Chloronaphthalene	330U	µg/Kg	330	60.52	B016320	BR	06/23/2011	06/27/2011
2-Chlorophenol	330U	µg/Kg	330	23.65	B016320	BR	06/23/2011	06/27/2011
2-Methylnaphthalene	330U	µg/Kg	330	20.94	B016320	BR	06/23/2011	06/27/2011
2-Methylphenol	330U	µg/Kg	330	20.94	B016320	BR	06/23/2011	06/27/2011
2-Nitroaniline	1600U	µg/Kg	1600	51.50	B016320	BR	06/23/2011	06/27/2011
2-Nitrophenol	330U	µg/Kg	330	31.56	B016320	BR	06/23/2011	06/27/2011
3,3'-Dichlorobenzidine	1600U	µg/Kg	1600	43.49	B016320	BR	06/23/2011	06/27/2011
3/4-Methylphenol	330U	µg/Kg	330	24.75	B016320	BR	06/23/2011	06/27/2011
3-Nitroaniline	330U	µg/Kg	330	43.29	B016320	BR	06/23/2011	06/27/2011
4,6-Dinitro-2-methylphenol	1600U	µg/Kg	1600	43.19	B016320	BR	06/23/2011	06/27/2011
4-Bromophenyl phenyl ether	330U	µg/Kg	330	22.95	B016320	BR	06/23/2011	06/27/2011
4-Chloro-3-methylphenol	660U	µg/Kg	660	49.30	B016320	BR	06/23/2011	06/27/2011
4-Chloroaniline	330U	µg/Kg	330	33.17	B016320	BR	06/23/2011	06/27/2011
4-Chlorophenyl phenyl ether	330U	µg/Kg	330	21.44	B016320	BR	06/23/2011	06/27/2011
4-Nitroaniline	1600U	µg/Kg	1600	58.02	B016320	BR	06/23/2011	06/27/2011
4-Nitrophenol	1600U	µg/Kg	1600	292.59	B016320	BR	06/23/2011	06/27/2011
Acenaphthene	330U	µg/Kg	330	25.75	B016320	BR	06/23/2011	06/27/2011
Acenaphthylene	330U	µg/Kg	330	18.14	B016320	BR	06/23/2011	06/27/2011
Acetophenone	330U	µg/Kg	330	21.44	B016320	BR	06/23/2011	06/27/2011
Aniline	330U	µg/Kg	330	29.06	B016320	BR	06/23/2011	06/27/2011
Anthracene	330U	µg/Kg	330	20.84	B016320	BR	06/23/2011	06/27/2011
Benzidine	1600U	µg/Kg	1600	1,423.848	B016320	BR	06/23/2011	06/27/2011
Benzo[a]anthracene	330U	µg/Kg	330	44.59	B016320	BR	06/23/2011	06/27/2011
Benzo[a]pyrene	330U	µg/Kg	330	68.84	B016320	BR	06/23/2011	06/27/2011
Benzo[b]fluoranthene	330U	µg/Kg	330	64.83	B016320	BR	06/23/2011	06/27/2011
Benzo[g,h,i]perylene	330U	µg/Kg	330	82.87	B016320	BR	06/23/2011	06/27/2011
Benzo[k]fluoranthene	330U	µg/Kg	330	93.89	B016320	BR	06/23/2011	06/27/2011
Benzoic acid	1600U	µg/Kg	1600	320.64	B016320	BR	06/23/2011	06/27/2011
Benzyl alcohol	660U	µg/Kg	660	31.96	B016320	BR	06/23/2011	06/27/2011
Bis(2-chloroethoxy)methane	330U	µg/Kg	330	22.04	B016320	BR	06/23/2011	06/27/2011

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6-16-11-8

11F3016-08 (Solid)

Analyte	Result	Units	Reporting Limit	MDL	Batch	Analyst	Prepared	Analyzed
Method: SW-846 8270C								
8270								
Bis(2-chloroethyl)ether	330U	µg/Kg	330	20.94	B016320	BR	06/23/2011	06/27/2011
Bis(2-ethylhexyl)phthalate	330U	µg/Kg	330	47.39	B016320	BR	06/23/2011	06/27/2011
Butyl benzyl phthalate	330U	µg/Kg	330	39.88	B016320	BR	06/23/2011	06/27/2011
Carbazole	330U	µg/Kg	330	27.96	B016320	BR	06/23/2011	06/27/2011
Chrysene	330U	µg/Kg	330	45.29	B016320	BR	06/23/2011	06/27/2011
Dibenz[a,h]anthracene	330U	µg/Kg	330	63.93	B016320	BR	06/23/2011	06/27/2011
Dibenzofuran	330U	µg/Kg	330	20.44	B016320	BR	06/23/2011	06/27/2011
Diethyl phthalate	330U	µg/Kg	330	34.07	B016320	BR	06/23/2011	06/27/2011
Dimethyl phthalate	330U	µg/Kg	330	24.65	B016320	BR	06/23/2011	06/27/2011
Di-n-butyl phthalate	330U	µg/Kg	330	35.77	B016320	BR	06/23/2011	06/27/2011
Di-n-octyl phthalate	330U	µg/Kg	330	56.91	B016320	BR	06/23/2011	06/27/2011
Fluoranthene	330U	µg/Kg	330	30.86	B016320	BR	06/23/2011	06/27/2011
Fluorene	330U	µg/Kg	330	25.45	B016320	BR	06/23/2011	06/27/2011
Hexachlorobenzene	390D	µg/Kg	330	31.56	B016320	BR	06/23/2011	06/27/2011
Hexachlorobutadiene	810D	µg/Kg	330	20.24	B016320	BR	06/23/2011	06/27/2011
Hexachlorocyclopentadiene	330U	µg/Kg	330	25.15	B016320	BR	06/23/2011	06/27/2011
Hexachloroethane	330U	µg/Kg	330	23.65	B016320	BR	06/23/2011	06/27/2011
Indeno[1,2,3cd]pyrene	330U	µg/Kg	330	67.33	B016320	BR	06/23/2011	06/27/2011
Isophorone	330U	µg/Kg	330	19.34	B016320	BR	06/23/2011	06/27/2011
Naphthalene	330U	µg/Kg	330	17.33	B016320	BR	06/23/2011	06/27/2011
Nitrobenzene	330U	µg/Kg	330	19.34	B016320	BR	06/23/2011	06/27/2011
N-Nitrosodimethylamine	330U	µg/Kg	330	74.55	B016320	BR	06/23/2011	06/27/2011
N-Nitrosodi-n-propylamine	330U	µg/Kg	330	23.65	B016320	BR	06/23/2011	06/27/2011
N-Nitrosodiphenylamine	330U	µg/Kg	330	22.04	B016320	BR	06/23/2011	06/27/2011
Pentachlorophenol	1600U	µg/Kg	1600	44.09	B016320	BR	06/23/2011	06/27/2011
Phenanthrene	330U	µg/Kg	330	19.64	B016320	BR	06/23/2011	06/27/2011
Phenol	330U	µg/Kg	330	23.15	B016320	BR	06/23/2011	06/27/2011
Pyrene	330U	µg/Kg	330	40.18	B016320	BR	06/23/2011	06/27/2011
Pyridine	330U	µg/Kg	330	104.21	B016320	BR	06/23/2011	06/27/2011
Total Cresol	330U	µg/Kg	330	20.94	B016320	BR	06/23/2011	06/27/2011

Surrogate: 2,4,6-Tribromophenol

74.5 %

13.9-145

B016320 06/23/2011

06/27/2011

SW-846 8270C

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11F3016-08 (Solid)

Analyte	Result	Units	Reporting Limit	MDL	Batch	Analyst	Prepared	Analyzed
8270		Method: SW-846 8270C						
<i>Surrogate: 2-Fluorobiphenyl</i>	42.6 %	28.1-110	B016320 06/23/2011	06/27/2011			<i>SW-846 8270C</i>	
<i>Surrogate: 2-Fluorophenol</i>	58.7 %	24.5-110	B016320 06/23/2011	06/27/2011			<i>SW-846 8270C</i>	
<i>Surrogate: Nitrobenzene-d5</i>	47.9 %	33.6-110	B016320 06/23/2011	06/27/2011			<i>SW-846 8270C</i>	
<i>Surrogate: Phenol-d5</i>	70.5 %	29.6-110	B016320 06/23/2011	06/27/2011			<i>SW-846 8270C</i>	
<i>Surrogate: Terphenyl-d14</i>	33.7 %	35.8-121	B016320 06/23/2011	06/27/2011			<i>SW-846 8270C</i>	

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CERTIFICATE OF ANALYSIS

Work Order Number:

11F3016

O & M, Inc.
450 Montbrook Lane
Knoxville TN, 37919

Project Number: Fields Brook
Project Manager: Valerie A. Rule, P.E.

Reported:
08/18/2011 13:45

GCMS Semivolatiles - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD RPD	RPD Limit	Notes
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Batch B016320

Blank (B016320-BLK1)

Prepared: 06/23/2011 Analyzed: 06/27/2011

1,2,4-Trichlorobenzene	ND	330	µg/Kg
1,2-Dichlorobenzene	ND	330	µg/Kg
1,2-Diphenyl-hydrazine	ND	330	µg/Kg
1,3-Dichlorobenzene	ND	330	µg/Kg
1,4-Dichlorobenzene	ND	330	µg/Kg
2,2'-oxybis(1-chloropropane)	ND	330	µg/Kg
2,4,5-Trichlorophenol	ND	330	µg/Kg
2,4,6-Trichlorophenol	ND	330	µg/Kg
2,4-Dichlorophenol	ND	330	µg/Kg
2,4-Dimethylphenol	ND	330	µg/Kg
2,4-Dinitrophenol	ND	1600	µg/Kg
2,4-Dinitrotoluene	ND	330	µg/Kg
2,6-Dichlorophenol	ND	330	µg/Kg
2,6-Dinitrotoluene	ND	330	µg/Kg
2-Chloronaphthalene	ND	330	µg/Kg
2-Chlorophenol	ND	330	µg/Kg
2-Methylnaphthalene	ND	330	µg/Kg
2-Methylphenol	ND	330	µg/Kg
2-Nitroaniline	ND	1600	µg/Kg
2-Nitrophenol	ND	330	µg/Kg
3,3'-Dichlorobenzidine	ND	1600	µg/Kg
3/4-Methylphenol	ND	330	µg/Kg
3-Nitroaniline	ND	330	µg/Kg
4,6-Dinitro-2-methylphenol	ND	1600	µg/Kg
4-Bromophenyl phenyl ether	ND	330	µg/Kg
4-Chloro-3-methylphenol	ND	660	µg/Kg
4-Chloroaniline	ND	330	µg/Kg
4-Chlorophenyl phenyl ether	ND	330	µg/Kg
4-Nitroaniline	ND	1600	µg/Kg
4-Nitrophenol	ND	1600	µg/Kg
Acenaphthene	ND	330	µg/Kg
Acenaphthylene	ND	330	µg/Kg

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CERTIFICATE OF ANALYSIS

Work Order Number:

11F3016

O & M, Inc.

450 Montbrook Lane
Knoxville TN, 37919

Project Number: Fields Brook

Project Manager: Valerie A. Rule, P.E.

Reported:

08/18/2011 13:45

GCMS Semivolatiles - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B016320										
Blank (B016320-BLK1)										
Acetophenone	ND	330	µg/Kg							
Aniline	ND	330	µg/Kg							
Anthracene	ND	330	µg/Kg							
Benzidine	ND	1600	µg/Kg							
Benzo[a]anthracene	ND	330	µg/Kg							
Benzo[a]pyrene	ND	330	µg/Kg							
Benzo[b]fluoranthene	ND	330	µg/Kg							
Benzo[g,h,i]perylene	ND	330	µg/Kg							
Benzo[k]fluoranthene	ND	330	µg/Kg							
Benzoic acid	ND	1600	µg/Kg							
Benzyl alcohol	ND	660	µg/Kg							
Bis(2-chloroethoxy)methane	ND	330	µg/Kg							
Bis(2-chloroethyl)ether	ND	330	µg/Kg							
Bis(2-ethylhexyl)phthalate	ND	330	µg/Kg							
Butyl benzyl phthalate	ND	330	µg/Kg							
Carbazole	ND	330	µg/Kg							
Chrysene	ND	330	µg/Kg							
Dibenz[a,h]anthracene	ND	330	µg/Kg							
Dibenzofuran	ND	330	µg/Kg							
Diethyl phthalate	ND	330	µg/Kg							
Dimethyl phthalate	ND	330	µg/Kg							
Di-n-butyl phthalate	ND	330	µg/Kg							
Di-n-octyl phthalate	ND	330	µg/Kg							
Fluoranthene	ND	330	µg/Kg							
Fluorene	ND	330	µg/Kg							
Hexachlorobenzene	ND	330	µg/Kg							
Hexachlorobutadiene	ND	330	µg/Kg							
Hexachlorocyclopentadiene	ND	330	µg/Kg							
Hexachloroethane	ND	330	µg/Kg							
Indeno[1,2,3cd]pyrene	ND	330	µg/Kg							
Isophorone	ND	330	µg/Kg							
Naphthalene	ND	330	µg/Kg							

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CERTIFICATE OF ANALYSIS

Work Order Number:

11F3016

O & M, Inc.

450 Montbrook Lane
Knoxville TN, 37919

Project Number: Fields Brook
Project Manager: Valerie A. Rule, P.E.

Reported:
08/18/2011 13:45

GCMS Semivolatiles - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD RPD	RPD Limit	Notes
Batch B016320										
Blank (B016320-BLK1)										
Nitrobenzene	ND	330	µg/Kg							
N-Nitrosodimethylamine	ND	330	µg/Kg							
N-Nitrosodi-n-propylamine	ND	330	µg/Kg							
N-Nitrosodiphenylamine	ND	330	µg/Kg							
Pentachlorophenol	ND	1600	µg/Kg							
Phenanthrene	ND	330	µg/Kg							
Phenol	ND	330	µg/Kg							
Pyrene	ND	330	µg/Kg							
Pyridine	ND	330	µg/Kg							
Total Cresol	ND	330	µg/Kg							
<i>Surrogate: 2,4,6-Tribromophenol</i>	160		ug/mL	150.0		110	13.9-145			
<i>Surrogate: 2-Fluorobiphenyl</i>	74		ug/mL	100.0		73.6	28.1-110			
<i>Surrogate: 2-Fluorophenol</i>	130		ug/mL	150.0		87.4	24.5-110			
<i>Surrogate: Nitrobenzene-d5</i>	79		ug/mL	100.0		79.4	33.6-110			
<i>Surrogate: Phenol-d5</i>	160		ug/mL	150.0		103	29.6-110			
<i>Surrogate: Terphenyl-d14</i>	70		ug/mL	100.0		70.5	35.8-121			
LCS (B016320-BS1)										
1,2,4-Trichlorobenzene	610	330	µg/Kg	666.7		91.5	35.9-110			
1,4-Dichlorobenzene	615	330	µg/Kg	666.7		92.3	20-124			
2,2'-oxybis(1-chloropropane)	696	330	µg/Kg	666.7			10-113			
2,4-Dinitrotoluene	804	330	µg/Kg	666.7		121	42.6-110			
2-Chloronaphthalene	655	330	µg/Kg	666.7		98.3	19-111			
2-Chlorophenol	663	330	µg/Kg	666.7		99.4	36.1-110			
3,3'-Dichlorobenzidine	750	1600	µg/Kg	666.7		112	50-150			
4-Chloro-3-methylphenol	728	660	µg/Kg	666.7		109	40.6-119			
4-Chlorophenyl phenyl ether	683	330	µg/Kg	666.7		102	24-113			
4-Nitrophenol	816	1600	µg/Kg	666.7		122	39.1-110			
Acenaphthene	641	330	µg/Kg	666.7		96.2	42.1-110			
Benzog, h,i]perylene	637	330	µg/Kg	666.7		95.6	50-150			
Benzo[k]fluoranthene	647	330	µg/Kg	666.7		97.0	28-144			
Bis(2-ethylhexyl)phthalate	657	330	µg/Kg	666.7		98.5	22-128			

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CERTIFICATE OF ANALYSIS

Work Order Number:

11F3016

O & M, Inc.

450 Montbrook Lane
Knoxville TN, 37919

Project Number: Fields Brook

Project Manager: Valerie A. Rule, P.E.

Reported:

08/18/2011 13:45

GCMS Semivolatiles - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B016320

LCS (B016320-BS1)

				Prepared: 06/23/2011	Analyzed: 06/27/2011
Dibenz[a,h]anthracene	667	330	µg/Kg	666.7	100 26-175
Diethyl phthalate	698	330	µg/Kg	666.7	105 16-119
Dimethyl phthalate	686	330	µg/Kg	666.7	103 15-130
Indeno[1,2,3cd]pyrene	748	330	µg/Kg	666.7	112 50-150
N-Nitrosodi-n-propylamine	758	330	µg/Kg	666.7	114 38.1-110
Pentachlorophenol	429	1600	µg/Kg	666.7	64.4 22.1-110
Phenol	647	330	µg/Kg	666.7	97.0 38.9-110
Pyrene	626	330	µg/Kg	666.7	94.0 44.3-116
<i>Surrogate: 2,4,6-Tribromophenol</i>	3400		µg/Kg	3333	101 13.9-145
<i>Surrogate: 2-Fluorobiphenyl</i>	1900		µg/Kg	3333	55.8 28.1-110
<i>Surrogate: 2-Fluorophenol</i>	2800		µg/Kg	3333	82.7 24.5-110
<i>Surrogate: Nitrobenzene-d5</i>	2000		µg/Kg	3333	60.7 33.6-110
<i>Surrogate: Phenol-d5</i>	3400		µg/Kg	3333	101 29.6-110
<i>Surrogate: Terphenyl-d14</i>	1800		µg/Kg	3333	53.7 35.8-121

Matrix Spike (B016320-MS1)

		Source: 11F3016-03		Prepared: 06/23/2011	Analyzed: 06/27/2011
1,2,4-Trichlorobenzene	472	330	µg/Kg	666.7	ND 33.9-110
1,4-Dichlorobenzene	488	330	µg/Kg	666.7	ND 73.2 10-134
2,2'-oxybis(1-chloropropane)	558	330	µg/Kg	ND	10-123
2,4-Dinitrotoluene	699	330	µg/Kg	666.7	ND 105 49.9-110
2-Chloronaphthalene	511	330	µg/Kg	666.7	ND 76.7 10-121
2-Chlorophenol	511	330	µg/Kg	666.7	ND 76.7 35.7-110
3,3'-Dichlorobenzidine	594	1600	µg/Kg	666.7	ND 89.1 40-160
4-Chloro-3-methylphenol	572	660	µg/Kg	666.7	ND 85.8 41.5-121
4-Chlorophenyl phenyl ether	578	330	µg/Kg	666.7	ND 86.7 14-123
4-Nitrophenol	1000	1600	µg/Kg	666.7	ND 150 32.1-121
Acenaphthene	533	330	µg/Kg	666.7	ND 79.9 39.8-110
Benzo[g,h,i]perylene	483	330	µg/Kg	666.7	ND 72.4 40-160
Benzo[k]fluoranthene	546	330	µg/Kg	666.7	ND 81.9 18-154
Bis(2-ethylhexyl)phthalate	565	330	µg/Kg	666.7	ND 84.8 12-138
Dibenz[a,h]anthracene	515	330	µg/Kg	666.7	ND 77.3 16-185
Diethyl phthalate	590	330	µg/Kg	666.7	ND 88.5 10-129

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CERTIFICATE OF ANALYSIS

Work Order Number:

11F3016

O & M, Inc.

450 Montbrook Lane
Knoxville TN, 37919

Project Number: Fields Brook
Project Manager: Valerie A. Rule, P.E.

Reported:
08/18/2011 13:45

GCMS Semivolatiles - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD RPD	RPD Limit	Notes
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Batch B016320

Matrix Spike (B016320-MS1)	Source: 11F3016-03	Prepared: 06/23/2011	Analyzed: 06/27/2011
Dimethyl phthalate	559	330 µg/Kg	666.7 ND 83.9 10-140
Indeno[1,2,3cd]pyrene	578	330 µg/Kg	666.7 ND 86.7 40-160
N-Nitrosodi-n-propylamine	680	330 µg/Kg	666.7 ND 102 37.4-110
Pentachlorophenol	414	1600 µg/Kg	666.7 ND 62.2 10.6-110
Phenol	510	330 µg/Kg	666.7 ND 76.5 43.3-110
Pyrene	479	330 µg/Kg	666.7 68.0 61.6 37.6-113
Surrogate: 2,4,6-Tribromophenol	2700	µg/Kg	3333 80.6 13.9-145
Surrogate: 2-Fluorobiphenyl	1400	µg/Kg	3333 40.7 28.1-110
Surrogate: 2-Fluorophenol	2100	µg/Kg	3333 62.4 24.5-110
Surrogate: Nitrobenzene-d5	1400	µg/Kg	3333 42.3 33.6-110
Surrogate: Phenol-d5	2500	µg/Kg	3333 76.2 29.6-110
Surrogate: Terphenyl-d14	1300	µg/Kg	3333 37.6 35.8-121

Matrix Spike Dup (B016320-MSD1)	Source: 11F3016-03	Prepared: 06/23/2011	Analyzed: 06/27/2011
1,2,4-Trichlorobenzene	537	330 µg/Kg	668.2 ND 80.4 33.9-110 12.9 30
1,4-Dichlorobenzene	553	330 µg/Kg	668.2 ND 82.8 10-134 12.5 30
2,2'-oxybis(1-chloropropane)	606	330 µg/Kg	ND 10-123 8.26 30
2,4-Dinitrotoluene	735	330 µg/Kg	668.2 ND 110 49.9-110 5.03 30
2-Chloronaphthalene	556	330 µg/Kg	668.2 ND 83.2 10-121 8.36 30
2-Chlorophenol	559	330 µg/Kg	668.2 ND 83.6 35.7-110 8.84 30
3,3'-Dichlorobenzidine	621	1600 µg/Kg	668.2 ND 93.0 40-160 4.46 30
4-Chloro-3-methylphenol	601	660 µg/Kg	668.2 ND 90.0 41.5-121 5.07 30
4-Chlorophenyl phenyl ether	593	330 µg/Kg	668.2 ND 88.7 14-123 2.51 30
4-Nitrophenol	788	1600 µg/Kg	668.2 ND 118 32.1-121 24.0 30
Acenaphthene	581	330 µg/Kg	668.2 ND 87.0 39.8-110 8.74 30
Benzo[g,h,i]perylene	486	330 µg/Kg	668.2 ND 72.8 40-160 0.785 30
Benzo[k]fluoranthene	543	330 µg/Kg	668.2 ND 81.2 18-154 0.625 30
Bis(2-ethylhexyl)phthalate	601	330 µg/Kg	668.2 ND 90.0 12-138 6.24 30
Dibenz[a,h]anthracene	515	330 µg/Kg	668.2 ND 77.0 16-185 0.155 30
Diethyl phthalate	601	330 µg/Kg	668.2 ND 89.9 10-129 1.80 30
Dimethyl phthalate	568	330 µg/Kg	668.2 ND 85.0 10-140 1.48 30
Indeno[1,2,3cd]pyrene	582	330 µg/Kg	668.2 ND 87.1 40-160 0.636 30

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CERTIFICATE OF ANALYSIS

Work Order Number:

11F3016

O & M, Inc.

450 Montbrook Lane
Knoxville TN, 37919

Project Number: Fields Brook

Project Manager: Valerie A. Rule, P.E.

Reported:

08/18/2011 13:45

GCMS Semivolatiles - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
---------	--------	-----------------	-------	-------------	---------------	------	-------------	-----	-----------	-------

Batch B016320

Matrix Spike Dup (B016320-MSD1)	Source: 11F3016-03	Prepared: 06/23/2011	Analyzed: 06/27/2011
N-Nitrosodi-n-propylamine	763	330 µg/Kg	668.2 ND 114 37.4-110 11.5 30
Pentachlorophenol	424	1600 µg/Kg	668.2 ND 63.4 10.6-110 2.22 30
Phenol	563	330 µg/Kg	668.2 ND 84.2 43.3-110 9.88 30
Pyrene	540	330 µg/Kg	668.2 68.0 70.6 37.6-113 12.0 30
Surrogate: 2,4,6-Tribromophenol	2600	µg/Kg	3341 76.7 13.9-145
Surrogate: 2-Fluorobiphenyl	1400	µg/Kg	3341 41.3 28.1-110
Surrogate: 2-Fluorophenol	2200	µg/Kg	3341 65.2 24.5-110
Surrogate: Nitrobenzene-d5	1500	µg/Kg	3341 45.0 33.6-110
Surrogate: Phenol-d5	2800	µg/Kg	3341 83.4 29.6-110
Surrogate: Terphenyl-d14	1300	µg/Kg	3341 38.6 35.8-121

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O & M, Inc.

450 Montbrook Lane
Knoxville TN, 37919

Project Number: Fields Brook
Project Manager: Valerie A. Rule, P.E.

Reported:
08/18/2011 13:45

GCMS Volatiles - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD RPD Limit	Notes
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Batch B016317

Blank (B016317-BLK1)

Prepared & Analyzed: 06/23/2011

1,1,1,2-Tetrachloroethane	ND	10	µg/Kg
1,1,1-Trichloroethane	ND	5.0	µg/Kg
1,1,2,2-Tetrachloroethane	ND	5.0	µg/Kg
1,1,2-Trichloroethane	ND	5.0	µg/Kg
1,1-Dichloroethane	ND	5.0	µg/Kg
1,1-Dichloroethene	ND	5.0	µg/Kg
1,2-Dichloroethane	ND	5.0	µg/Kg
1,2-Dichloropropane	ND	5.0	µg/Kg
2-Butanone	ND	10	µg/Kg
2-Hexanone	ND	10	µg/Kg
4-Methyl-2-Pentanone	ND	10	µg/Kg
Acetone	ND	50	µg/Kg
Acrolein	ND	100	µg/Kg
Acrylonitrile	ND	100	µg/Kg
Benzene	ND	5.0	µg/Kg
Bromodichloromethane	ND	5.0	µg/Kg
Bromoform	ND	5.0	µg/Kg
Bromomethane	ND	10	µg/Kg
Carbon Disulfide	ND	10	µg/Kg
Carbon tetrachloride	ND	5.0	µg/Kg
Chlorobenzene	ND	5.0	µg/Kg
Chloroethane	ND	10	µg/Kg
Chloroform	ND	5.0	µg/Kg
Chloromethane	ND	10	µg/Kg
cis-1,2-Dichloroethene	ND	5.0	µg/Kg
cis-1,3-Dichloropropene	ND	5.0	µg/Kg
Dibromochloromethane	ND	5.0	µg/Kg
Ethylbenzene	ND	5.0	µg/Kg
m,p-Xylene	ND	5.0	µg/Kg
Methylene chloride	ND	20	µg/Kg
Methyl-t-Butyl Ether	ND	5.0	µg/Kg
o-Xylene	ND	5.0	µg/Kg

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Work Order Number:

11F3016

O & M, Inc.

450 Montbrook Lane
Knoxville TN, 37919

Project Number: Fields Brook

Reported:

Project Manager: Valerie A. Rule, P.E.

08/18/2011 13:45

GCMS Volatiles - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B016317**Blank (B016317-BLK1)**

Prepared & Analyzed: 06/23/201

Styrene	ND	5.0	µg/Kg							
Tetrachloroethene	ND	5.0	µg/Kg							
Toluene	ND	5.0	µg/Kg							
trans-1,2-Dichloroethene	ND	5.0	µg/Kg							
trans-1,3-Dichloropropene	ND	5.0	µg/Kg							
Trichloroethene	ND	5.0	µg/Kg							
Trichlorofluoromethane	ND	10	µg/Kg							
Vinyl Acetate	ND	10	µg/Kg							
Vinyl chloride	ND	10	µg/Kg							
Total 1,2-Dichloroethene	ND	10	µg/Kg							
Total Xylenes	ND	5.0	µg/Kg							
<i>Surrogate: 1,2-Dichloroethane-d4</i>	56		µg/L	50.00		112	51.7-162			
<i>Surrogate: 4-Bromofluorobenzene</i>	50		µg/L	50.00		99.6	57.4-135			
<i>Surrogate: Dibromofluoromethane</i>	51		µg/L	50.00		102	63.5-139			
<i>Surrogate: Toluene-d8</i>	52		µg/L	50.00		105	66.6-143			

LCS (B016317-BS1)

Prepared & Analyzed: 06/23/201

1,1,1,2-Tetrachloroethane	44.5	µg/L	50.00	89.1	73.2-127
1,1,1-Trichloroethane	42.8	µg/L	50.00	85.5	68.4-134
1,1,2,2-Tetrachloroethane	52.1	µg/L	50.00	104	67.8-115
1,1,2-Trichloroethane	45.8	µg/L	50.00	91.7	74-114
1,1-Dichloroethane	44.3	µg/L	50.00	88.6	70.3-121
1,1-Dichloroethene	38.1	µg/L	50.00	76.1	54-119
1,2-Dichloroethane	44.3	µg/L	50.00	88.5	65.5-129
1,2-Dichloropropane	44.6	µg/L	50.00	89.2	68.6-124
2-Butanone	42.3	µg/L	50.00	84.6	55.8-114
2-Hexanone	46.8	µg/L	50.00	93.6	49.9-110
4-Methyl-2-Pentanone	45.9	µg/L	50.00	91.7	57-114
Acetone	51.2	µg/L	50.00	102	37.2-135
Acrylonitrile	54.4	µg/L	50.00	109	45.3-148
Benzene	44.3	µg/L	50.00	88.7	71.8-123
Bromodichloromethane	44.1	µg/L	50.00	88.2	69.4-132

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CERTIFICATE OF ANALYSIS

Work Order Number:

11F3016

O & M, Inc.

450 Montbrook Lane
Knoxville TN, 37919

Project Number: Fields Brook
Project Manager: Valerie A. Rule, P.E.

Reported:
08/18/2011 13:45

GCMS Volatiles - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B016317										
LCS (B016317-BS1)										
Prepared & Analyzed: 06/23/2011										
Bromoform	40.5	µg/L	50.00		81.0	54.7-123				
Bromomethane	36.1	µg/L	50.00		72.2	10-143				
Carbon Disulfide	57.7	µg/L	50.00		115	80-159				
Carbon tetrachloride	39.3	µg/L	50.00		78.6	68.6-138				
Chlorobenzene	46.4	µg/L	50.00		92.8	80.1-122				
Chloroethane	50.6	µg/L	50.00		101	53.6-121				
Chloroform	45.3	µg/L	50.00		90.5	71.9-127				
Chloromethane	32.3	µg/L	50.00		64.6	28.3-124				
cis-1,2-Dichloroethene	43.2	µg/L	50.00		86.5	81.5-132				
cis-1,3-Dichloropropene	50.0	µg/L	50.00		99.9	74.9-117				
Dibromochloromethane	43.1	µg/L	50.00		86.1	65.1-132				
Ethylbenzene	47.7	µg/L	50.00		95.5	77.1-124				
m,p-Xylene	94.5	µg/L	100.0		94.5	77.4-126				
Methylene chloride	43.2	µg/L	50.00		86.5	69.2-138				
Methyl-t-Butyl Ether	46.7	µg/L	50.00		93.4	77.8-120				
o-Xylene	47.3	µg/L	50.00		94.6	74.9-124				
Styrene	45.0	µg/L	50.00		90.0	77.7-117				
Tetrachloroethene	45.0	µg/L	50.00		90.0	81.9-127				
Toluene	47.7	µg/L	50.00		95.4	76.7-122				
trans-1,2-Dichloroethene	40.0	µg/L	50.00		80.0	67.6-126				
trans-1,3-Dichloropropene	44.4	µg/L	50.00		88.7	77.6-129				
Trichloroethene	42.9	µg/L	50.00		85.8	73.1-131				
Trichlorofluoromethane	52.6	µg/L	50.00		105	61.3-140				
Vinyl Acetate	43.8	µg/L	50.00		87.5	52.4-154				
Vinyl chloride	43.2	µg/L	50.00		86.4	48.5-124				
Surrogate: 1,2-Dichloroethane-d4	51	µg/L	50.00		102	51.7-162				
Surrogate: 4-Bromofluorobenzene	50	µg/L	50.00		99.3	57.4-135				
Surrogate: Dibromofluoromethane	50	µg/L	50.00		100	63.5-139				
Surrogate: Toluene-d8	53	µg/L	50.00		106	66.6-143				

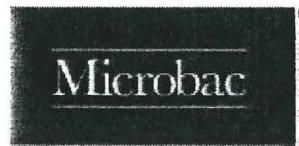
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CERTIFICATE OF ANALYSIS

Work Order Number:

11F3016

O & M, Inc.
450 Montbrook Lane
Knoxville TN, 37919

Project Number: Fields Brook
Project Manager: Valerie A. Rule, P.E.

Reported:
08/18/2011 13:45

GCMS Volatiles - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B016317										
LCS Dup (B016317-BSD1)										
					Prepared & Analyzed: 06/23/2011					
1,1,1,2-Tetrachloroethane	46.0		µg/L	50.00	92.0	73.2-127	3.27	30		
1,1,1-Trichloroethane	42.3		µg/L	50.00	84.6	68.4-134	1.03	30		
1,1,2,2-Tetrachloroethane	51.4		µg/L	50.00	103	67.8-115	1.22	30		
1,1,2-Trichloroethane	45.9		µg/L	50.00	91.9	74-114	0.196	30		
1,1-Dichloroethane	43.0		µg/L	50.00	86.0	70.3-121	2.98	30		
1,1-Dichloroethene	35.1		µg/L	50.00	70.2	54-119	8.15	30		
1,2-Dichloroethane	43.5		µg/L	50.00	87.0	65.5-129	1.78	30		
1,2-Dichloropropane	44.2		µg/L	50.00	88.3	68.6-124	0.946	30		
2-Butanone	40.5		µg/L	50.00	81.0	55.8-114	4.44	30		
2-Hexanone	44.8		µg/L	50.00	89.6	49.9-110	4.32	200		
4-Methyl-2-Pentanone	44.2		µg/L	50.00	88.5	57-114	3.62	30		
Acetone	58.1		µg/L	50.00	116	37.2-135	12.6	30		
Acrylonitrile	52.3		µg/L	50.00	105	45.3-148	3.99	30		
Benzene	43.0		µg/L	50.00	86.0	71.8-123	3.07	30		
Bromodichloromethane	44.7		µg/L	50.00	89.4	69.4-132	1.35	30		
Bromoform	44.4		µg/L	50.00	88.8	54.7-123	9.28	30		
Bromomethane	44.2		µg/L	50.00	88.5	10-143	20.3	30		
Carbon Disulfide	58.7		µg/L	50.00	117	80-159	1.75	30		
Carbon tetrachloride	45.8		µg/L	50.00	91.5	68.6-138	15.3	30		
Chlorobenzene	45.6		µg/L	50.00	91.3	80.1-122	1.65	30		
Chloroethane	51.6		µg/L	50.00	103	53.6-121	2.06	30		
Chloroform	44.2		µg/L	50.00	88.4	71.9-127	2.39	30		
Chloromethane	39.8		µg/L	50.00	79.5	28.3-124	20.7	30		
cis-1,2-Dichloroethene	42.5		µg/L	50.00	85.0	81.5-132	1.73	30		
cis-1,3-Dichloropropene	53.9		µg/L	50.00	108	74.9-117	7.53	30		
Dibromochloromethane	45.7		µg/L	50.00	91.4	65.1-132	5.97	30		
Ethylbenzene	48.1		µg/L	50.00	96.2	77.1-124	0.772	30		
m,p-Xylene	95.2		µg/L	100.0	95.2	77.4-126	0.791	30		
Methylene chloride	40.0		µg/L	50.00	80.1	69.2-138	7.66	30		
Methyl-t-Butyl Ether	45.2		µg/L	50.00	90.4	77.8-120	3.22	30		
o-Xylene	47.9		µg/L	50.00	95.9	74.9-124	1.30	30		
Styrene	46.1		µg/L	50.00	92.2	77.7-117	2.46	30		

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CERTIFICATE OF ANALYSIS

Work Order Number:

11F3016

O & M, Inc.

450 Montbrook Lane
Knoxville TN, 37919

Project Number: Fields Brook
Project Manager: Valerie A. Rule, P.E.

Reported:
08/18/2011 13:45

GCMS Volatiles - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD RPD	Limit Notes
---------	--------	-----------------	-------	-------------	---------------	------	-------------	---------	-------------

Batch B016317

LCS Dup (B016317-BSD1)

Prepared & Analyzed: 06/23/2011

Tetrachloroethene	44.9	µg/L	50.00		89.8	81.9-127	0.156	30
Toluene	47.1	µg/L	50.00		94.2	76.7-122	1.20	30
trans-1,2-Dichloroethene	39.9	µg/L	50.00		79.7	67.6-126	0.351	30
trans-1,3-Dichloropropene	47.8	µg/L	50.00		95.7	77.6-129	7.51	30
Trichloroethene	40.3	µg/L	50.00		80.6	73.1-131	6.25	30
Trichlorofluoromethane	53.8	µg/L	50.00		108	61.3-140	2.24	30
Vinyl Acetate	43.0	µg/L	50.00		85.9	52.4-154	1.87	30
Vinyl chloride	45.4	µg/L	50.00		90.9	48.5-124	5.05	30
<i>Surrogate: 1,2-Dichloroethane-d4</i>	52	µg/L	50.00		104	51.7-162		
<i>Surrogate: 4-Bromofluorobenzene</i>	51	µg/L	50.00		102	57.4-135		
<i>Surrogate: Dibromofluoromethane</i>	51	µg/L	50.00		103	63.5-139		
<i>Surrogate: Toluene-d8</i>	52	µg/L	50.00		105	66.6-143		

Batch B016531

Blank (B016531-BLK1)

Prepared & Analyzed: 06/29/2011

1,1,1,2-Tetrachloroethane	ND	10	µg/L
1,1,1-Trichloroethane	ND	5.0	µg/L
1,1,2,2-Tetrachloroethane	ND	5.0	µg/L
1,1,2-Trichloroethane	ND	5.0	µg/L
1,1-Dichloroethane	ND	5.0	µg/L
1,1-Dichloroethene	ND	5.0	µg/L
1,2-Dichloroethane	ND	5.0	µg/L
1,2-Dichloropropane	ND	5.0	µg/L
2-Butanone	ND	10	µg/L
2-Hexanone	ND	10	µg/L
4-Methyl-2-Pentanone	ND	10	µg/L
Acetone	ND	50	µg/L
Acrolein	ND	100	µg/L
Acrylonitrile	ND	100	µg/L
Benzene	ND	5.0	µg/L
Bromodichloromethane	ND	5.0	µg/L

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Knoxville TN, 37919

Project Number: Fields Brook

Project Manager: Valerie A. Rule, P.E.

Reported:

08/18/2011 13:45

GCMS Volatiles - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B016531										
Blank (B016531-BLK1)										
										Prepared & Analyzed: 06/29/2011
Bromoform	ND	5.0	µg/L							
Bromomethane	ND	10	µg/L							
Carbon Disulfide	ND	10	µg/L							
Carbon tetrachloride	ND	5.0	µg/L							
Chlorobenzene	ND	5.0	µg/L							
Chloroethane	ND	10	µg/L							
Chloroform	ND	5.0	µg/L							
Chloromethane	ND	10	µg/L							
cis-1,2-Dichloroethene	ND	5.0	µg/L							
cis-1,3-Dichloropropene	ND	5.0	µg/L							
Dibromochloromethane	ND	5.0	µg/L							
Ethylbenzene	ND	5.0	µg/L							
m,p-Xylene	ND	5.0	µg/L							
Methylene chloride	ND	10	µg/L							
Methyl-t-Butyl Ether	ND	5.0	µg/L							
o-Xylene	ND	5.0	µg/L							
Styrene	ND	5.0	µg/L							
Tetrachloroethene	ND	5.0	µg/L							
Toluene	ND	5.0	µg/L							
trans-1,2-Dichloroethene	ND	5.0	µg/L							
trans-1,3-Dichloropropene	ND	5.0	µg/L							
Trichloroethene	ND	5.0	µg/L							
Trichlorofluoromethane	ND	10	µg/L							
Vinyl Acetate	ND	10	µg/L							
Vinyl chloride	ND	2.0	µg/L							
Total 1,2-Dichloroethene	ND	5.0	µg/L							
Total Xylenes	ND	5.0	µg/L							
<i>Surrogate: 1,2-Dichloroethane-d4</i>	53		µg/L	50.00		107	74.5-132			
<i>Surrogate: 4-Bromo/fluorobenzene</i>	53		µg/L	50.00		106	80-120			
<i>Surrogate: Dibromo/fluoromethane</i>	53		µg/L	50.00		105	80-120			
<i>Surrogate: Toluene-d8</i>	49		µg/L	50.00		98.2	80-120			

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Work Order Number:

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450 Montbrook Lane
Knoxville TN, 37919

Project Number: Fields Brook
Project Manager: Valerie A. Rule, P.E.

Reported:
08/18/2011 13:45

GCMS Volatiles - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD RPD	RPD Limit	Notes
---------	--------	-----------------	-------	-------------	---------------	------	-------------	---------	-----------	-------

Batch B016531

LCS (B016531-BS1)

Prepared & Analyzed: 06/29/201

1,1,1,2-Tetrachloroethane	21.3	µg/L	20.00		107	75-123
1,1,1-Trichloroethane	20.3	µg/L	20.00		101	65.5-136
1,1,2,2-Tetrachloroethane	16.7	µg/L	20.00		83.7	65.2-116
1,1,2-Trichloroethane	18.2	µg/L	20.00		91.2	70.6-116
1,1-Dichloroethane	18.2	µg/L	20.00		91.2	68.9-123
1,1-Dichloroethene	17.2	µg/L	20.00		85.8	47.5-121
1,2-Dichloroethane	19.7	µg/L	20.00		98.4	67-134
1,2-Dichloropropane	18.8	µg/L	20.00		94.1	68.9-120
2-Butanone	17.2	µg/L	20.00		86.1	50.4-113
2-Hexanone	15.8	µg/L	20.00		79.0	48.3-117
4-Methyl-2-Pentanone	15.3	µg/L	20.00		76.3	53.8-128
Acetone	14.8	µg/L	20.00		73.9	52-135
Acrolein	14.2	µg/L	20.00		71.0	44.6-196
Acrylonitrile	16.1	µg/L	20.00		80.4	60.4-156
Benzene	19.0	µg/L	20.00		94.8	68.8-120
Bromodichloromethane	21.0	µg/L	20.00		105	73.4-127
Bromoform	20.5	µg/L	20.00		102	65.2-138
Bromomethane	6.76	µg/L	20.00		33.8	10-200
Carbon Disulfide	19.4	µg/L	20.00		97.0	58-181
Carbon tetrachloride	25.1	µg/L	20.00		126	63.7-142
Chlorobenzene	20.0	µg/L	20.00		99.8	76.3-117
Chloroethane	16.9	µg/L	20.00		84.4	45.2-157
Chloroform	19.6	µg/L	20.00		97.8	75.9-124
Chloromethane	10.6	µg/L	20.00		53.2	17.4-136
cis-1,2-Dichloroethene	19.2	µg/L	20.00		96.0	77.8-128
cis-1,3-Dichloropropene	25.0	µg/L	20.00		125	71.6-117
Dibromochloromethane	22.0	µg/L	20.00		110	59.3-133
Ethylbenzene	20.4	µg/L	20.00		102	74.7-116
m,p-Xylene	43.2	µg/L	40.00		108	76.3-116
Methylene chloride	18.6	µg/L	20.00		93.2	62-133
Methyl-t-Butyl Ether	18.3	µg/L	20.00		91.5	69.4-130
o-Xylene	22.1	µg/L	20.00		110	74.6-115

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GCMS Volatiles - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
---------	--------	-----------------	-------	-------------	---------------	------	-------------	-----	-----------	-------

Batch B016531

LCS (B016531-BS1)

Prepared & Analyzed: 06/29/201

Styrene	21.5	µg/L	20.00		107	71.1-111
Tetrachloroethene	18.7	µg/L	20.00		93.6	72.8-123
Toluene	18.8	µg/L	20.00		93.9	75.2-115
trans-1,2-Dichloroethene	18.2	µg/L	20.00		91.2	62.9-123
trans-1,3-Dichloropropene	23.6	µg/L	20.00		118	75.3-125
Trichloroethene	18.2	µg/L	20.00		91.2	72.8-121
Trichlorofluoromethane	21.1	µg/L	20.00		106	49.4-164
Vinyl Acetate	16.9	µg/L	20.00		84.6	52.5-154
Vinyl chloride	13.9	µg/L	20.00		69.3	44.7-139
Total Xylenes	65.3	µg/L	60.00		109	75-115
Surrogate: 1,2-Dichloroethane-d4	53	µg/L	50.00		107	74.5-132
Surrogate: 4-Bromofluorobenzene	52	µg/L	50.00		105	80-120
Surrogate: Dibromofluoromethane	53	µg/L	50.00		107	80-120
Surrogate: Toluene-d8	49	µg/L	50.00		97.7	80-120

LCS Dup (B016531-BSD1)

Prepared & Analyzed: 06/29/201

1,1,1,2-Tetrachloroethane	21.5	µg/L	20.00		108	75-123	0.980	30
1,1,1-Trichloroethane	19.8	µg/L	20.00		98.9	65.5-136	2.45	30
1,1,2,2-Tetrachloroethane	17.5	µg/L	20.00		87.6	65.2-116	4.55	30
1,1,2-Trichloroethane	18.6	µg/L	20.00		93.0	70.6-116	2.06	30
1,1-Dichloroethane	18.9	µg/L	20.00		94.6	68.9-123	3.55	30
1,1-Dichloroethene	16.8	µg/L	20.00		83.9	47.5-121	2.18	30
1,2-Dichloroethane	21.3	µg/L	20.00		106	67-134	7.82	30
1,2-Dichloropropane	19.3	µg/L	20.00		96.4	68.9-120	2.47	30
2-Butanone	21.0	µg/L	20.00		105	50.4-113	20.0	30
2-Hexanone	19.7	µg/L	20.00		98.4	48.3-117	21.9	30
4-Methyl-2-Pentanone	19.0	µg/L	20.00		95.0	53.8-128	21.8	30
Acetone	20.1	µg/L	20.00		101	52-135	30.6	30
Acrolein	14.9	µg/L	20.00		74.4	44.6-196	4.61	30
Acrylonitrile	20.0	µg/L	20.00		100	60.4-156	22.0	30
Benzene	19.3	µg/L	20.00		96.4	68.8-120	1.73	30
Bromodichloromethane	21.6	µg/L	20.00		108	73.4-127	2.77	30

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Erie Division

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Cheri Estes, Managing Director • E-mail: erie@microbac.com • http://www.microbac.com

CERTIFICATE OF ANALYSIS

Work Order Number:

11F3016

O & M, Inc.

450 Montbrook Lane
Knoxville TN, 37919

Project Number: Fields Brook
Project Manager: Valerie A. Rule, P.E.

Reported:
08/18/2011 13:45

GCMS Volatiles - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD RPD	Notes
Batch B016531									
LCS Dup (B016531-BSD1)									
Prepared & Analyzed: 06/29/201									
Bromoform	21.3	µg/L	20.00		106	65.2-138	3.93	30	
Bromomethane	3.87	µg/L	20.00		19.4	10-200	54.4	30	
Carbon Disulfide	18.6	µg/L	20.00		92.8	58-181	4.43	30	
Carbon tetrachloride	25.0	µg/L	20.00		125	63.7-142	0.439	30	
Chlorobenzene	20.0	µg/L	20.00		99.9	76.3-117	0.150	30	
Chloroethane	18.1	µg/L	20.00		90.4	45.2-157	6.98	30	
Chloroform	19.7	µg/L	20.00		98.4	75.9-124	0.561	30	
Chloromethane	12.8	µg/L	20.00		64.0	17.4-136	18.3	30	
cis-1,2-Dichloroethene	19.2	µg/L	20.00		96.1	77.8-128	0.104	30	
cis-1,3-Dichloropropene	24.5	µg/L	20.00		123	71.6-117	1.82	30	
Dibromochloromethane	21.8	µg/L	20.00		109	59.3-133	1.00	30	
Ethylbenzene	20.4	µg/L	20.00		102	74.7-116	0.196	30	
m,p-Xylene	42.2	µg/L	40.00		106	76.3-116	2.27	30	
Methylene chloride	19.1	µg/L	20.00		95.4	62-133	2.44	30	
Methyl-t-Butyl Ether	18.3	µg/L	20.00		91.4	69.4-130	0.109	30	
o-Xylene	21.6	µg/L	20.00		108	74.6-115	2.29	30	
Styrene	20.9	µg/L	20.00		104	71.1-111	2.74	30	
Tetrachloroethene	18.5	µg/L	20.00		92.3	72.8-123	1.40	30	
Toluene	18.5	µg/L	20.00		92.7	75.2-115	1.29	30	
trans-1,2-Dichloroethene	18.2	µg/L	20.00		90.8	62.9-123	0.440	30	
trans-1,3-Dichloropropene	24.0	µg/L	20.00		120	75.3-125	1.56	30	
Trichloroethene	18.4	µg/L	20.00		91.8	72.8-121	0.711	30	
Trichlorofluoromethane	21.4	µg/L	20.00		107	49.4-164	1.04	30	
Vinyl Acetate	17.2	µg/L	20.00		86.2	52.5-154	1.93	30	
Vinyl chloride	14.0	µg/L	20.00		70.1	44.7-139	1.15	30	
Total Xylenes	63.8	µg/L	60.00		106	75-115	2.28	30	
Surrogate: 1,2-Dichloroethane-d4	54	µg/L	50.00		108	74.5-132			
Surrogate: 4-Bromo-4-fluorobenzene	53	µg/L	50.00		107	80-120			
Surrogate: Dibromofluoromethane	52	µg/L	50.00		105	80-120			
Surrogate: Toluene-d8	48	µg/L	50.00		96.8	80-120			

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CERTIFICATE OF ANALYSIS

Work Order Number:

11F3016

O & M, Inc.

450 Montbrook Lane
Knoxville TN, 37919

Project Number: Fields Brook

Project Manager: Valerie A. Rule, P.E.

Reported:

08/18/2011 13:45

GCMS Volatiles - Quality Control

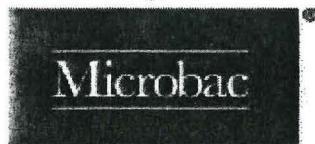
Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B016588										
Blank (B016588-BLK1)										
										Prepared & Analyzed: 06/30/2011
1,1,1,2-Tetrachloroethane	ND	10	µg/Kg							
1,1,1-Trichloroethane	ND	5.0	µg/Kg							
1,1,2,2-Tetrachloroethane	ND	5.0	µg/Kg							
1,1,2-Trichloroethane	ND	5.0	µg/Kg							
1,1-Dichloroethane	ND	5.0	µg/Kg							
1,1-Dichloroethene	ND	5.0	µg/Kg							
1,2-Dichloroethane	ND	5.0	µg/Kg							
1,2-Dichloropropane	ND	5.0	µg/Kg							
2-Butanone	ND	10	µg/Kg							
2-Hexanone	ND	10	µg/Kg							
4-Methyl-2-Pentanone	ND	10	µg/Kg							
Acetone	ND	50	µg/Kg							
Acrolein	ND	100	µg/Kg							
Acrylonitrile	ND	100	µg/Kg							
Benzene	ND	5.0	µg/Kg							
Bromodichloromethane	ND	5.0	µg/Kg							
Bromoform	ND	5.0	µg/Kg							
Bromomethane	ND	10	µg/Kg							
Carbon Disulfide	ND	10	µg/Kg							
Carbon tetrachloride	ND	5.0	µg/Kg							
Chlorobenzene	ND	5.0	µg/Kg							
Chloroethane	ND	10	µg/Kg							
Chloroform	ND	5.0	µg/Kg							
Chloromethane	ND	10	µg/Kg							
cis-1,2-Dichloroethene	ND	5.0	µg/Kg							
cis-1,3-Dichloropropene	ND	5.0	µg/Kg							
Dibromochloromethane	ND	5.0	µg/Kg							
Ethylbenzene	ND	5.0	µg/Kg							
m,p-Xylene	ND	5.0	µg/Kg							
Methylene chloride	ND	20	µg/Kg							
Methyl-t-Butyl Ether	ND	5.0	µg/Kg							
o-Xylene	ND	5.0	µg/Kg							

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O & M, Inc.

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Knoxville TN, 37919

Project Number: Fields Brook
Project Manager: Valerie A. Rule, P.E.

Reported:
08/18/2011 13:45

GCMS Volatiles - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B016588

Blank (B016588-BLK1)

Prepared & Analyzed: 06/30/201

Styrene	ND	5.0	µg/Kg							
Tetrachloroethene	ND	5.0	µg/Kg							
Toluene	ND	5.0	µg/Kg							
trans-1,2-Dichloroethene	ND	5.0	µg/Kg							
trans-1,3-Dichloropropene	ND	5.0	µg/Kg							
Trichloroethene	ND	5.0	µg/Kg							
Trichlorofluoromethane	ND	10	µg/Kg							
Vinyl Acetate	ND	10	µg/Kg							
Vinyl chloride	ND	10	µg/Kg							
Total 1,2-Dichloroethene	ND	10	µg/Kg							
Total Xylenes	ND	5.0	µg/Kg							
<i>Surrogate: 1,2-Dichloroethane-d4</i>	68		µg/L	50.00		136	51.7-162			
<i>Surrogate: 4-Bromofluorobenzene</i>	52		µg/L	50.00		104	57.4-135			
<i>Surrogate: Dibromofluoromethane</i>	52		µg/L	50.00		104	63.5-139			
<i>Surrogate: Toluene-d8</i>	53		µg/L	50.00		106	66.6-143			

LCS (B016588-BS1)

Prepared & Analyzed: 06/30/201

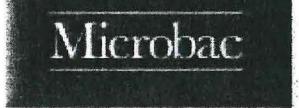
1,1,1,2-Tetrachloroethane	58.4	µg/L	50.00	117	73.2-127
1,1,1-Trichloroethane	60.0	µg/L	50.00	120	68.4-134
1,1,2,2-Tetrachloroethane	53.7	µg/L	50.00	107	67.8-115
1,1,2-Trichloroethane	61.7	µg/L	50.00	123	74-114
1,1-Dichloroethane	59.9	µg/L	50.00	120	70.3-121
1,1-Dichloroethene	49.5	µg/L	50.00	99.0	54-119
1,2-Dichloroethane	66.9	µg/L	50.00	134	65.5-129
1,2-Dichloropropane	58.1	µg/L	50.00	116	68.6-124
2-Butanone	42.8	µg/L	50.00	85.5	55.8-114
2-Hexanone	64.1	µg/L	50.00	128	49.9-110
4-Methyl-2-Pentanone	66.6	µg/L	50.00	133	57-114
Acetone	73.1	µg/L	50.00	146	37.2-135
Acrylonitrile	70.3	µg/L	50.00	141	45.3-148
Benzene	52.4	µg/L	50.00	105	71.8-123
Bromodichloromethane	60.5	µg/L	50.00	121	69.4-132

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O & M, Inc.

450 Montbrook Lane
Knoxville TN, 37919

Project Number: Fields Brook

Project Manager: Valerie A. Rule, P.E.

Reported:

08/18/2011 13:45

GCMS Volatiles - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD RPD	Limit Notes
Batch B016588									
LCS (B016588-BS1)									
					Prepared & Analyzed: 06/30/201				
Bromoform	51.6		µg/L	50.00		103	54.7-123		
Bromomethane	46.0		µg/L	50.00		92.0	10-143		
Carbon Disulfide	51.6		µg/L	50.00		103	80-159		
Carbon tetrachloride	57.6		µg/L	50.00		115	68.6-138		
Chlorobenzene	54.3		µg/L	50.00		109	80.1-122		
Chloroethane	51.0		µg/L	50.00		102	53.6-121		
Chloroform	59.6		µg/L	50.00		119	71.9-127		
Chloromethane	67.3		µg/L	50.00		135	28.3-124		
cis-1,2-Dichloroethene	54.4		µg/L	50.00		109	81.5-132		
cis-1,3-Dichloropropene	59.8		µg/L	50.00		120	74.9-117		
Dibromochloromethane	58.4		µg/L	50.00		117	65.1-132		
Ethylbenzene	54.1		µg/L	50.00		108	77.1-124		
m,p-Xylene	100		µg/L	100.0		100	77.4-126		
Methylene chloride	59.9		µg/L	50.00		120	69.2-138		
Methyl-t-Butyl Ether	52.4		µg/L	50.00		105	77.8-120		
o-Xylene	52.4		µg/L	50.00		105	74.9-124		
Styrene	53.5		µg/L	50.00		107	77.7-117		
Tetrachloroethene	54.6		µg/L	50.00		109	81.9-127		
Toluene	57.9		µg/L	50.00		116	76.7-122		
trans-1,2-Dichloroethene	52.2		µg/L	50.00		104	67.6-126		
trans-1,3-Dichloropropene	58.4		µg/L	50.00		117	77.6-129		
Trichloroethene	58.1		µg/L	50.00		116	73.1-131		
Trichlorofluoromethane	60.8		µg/L	50.00		122	61.3-140		
Vinyl Acetate	53.8		µg/L	50.00		108	52.4-154		
Vinyl chloride	48.4		µg/L	50.00		96.8	48.5-124		
Surrogate: 1,2-Dichloroethane-d4	62		µg/L	50.00		124	51.7-162		
Surrogate: 4-Bromo fluorobenzene	53		µg/L	50.00		106	57.4-135		
Surrogate: Dibromofluoromethane	52		µg/L	50.00		104	63.5-139		
Surrogate: Toluene-d8	55		µg/L	50.00		109	66.6-143		

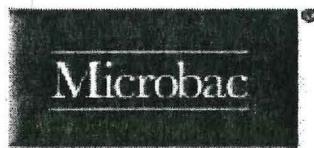
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CERTIFICATE OF ANALYSIS

Work Order Number:

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O & M, Inc.

450 Montbrook Lane
Knoxville TN, 37919

Project Number: Fields Brook
Project Manager: Valerie A. Rule, P.E.

Reported:
08/18/2011 13:45

GCMS Volatiles - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B016588										
LCS Dup (B016588-BSD1)										
Prepared & Analyzed: 06/30/201										
1,1,1,2-Tetrachloroethane	59.4	µg/L	50.00		119	73.2-127	1.78	30		
1,1,1-Trichloroethane	62.2	µg/L	50.00		124	68.4-134	3.68	30		
1,1,2,2-Tetrachloroethane	53.1	µg/L	50.00		106	67.8-115	1.12	30		
1,1,2-Trichloroethane	56.8	µg/L	50.00		114	74-114	8.33	30		
1,1-Dichloroethane	61.4	µg/L	50.00		123	70.3-121	2.44	30		
1,1-Dichloroethene	51.2	µg/L	50.00		102	54-119	3.40	30		
1,2-Dichloroethane	65.3	µg/L	50.00		131	65.5-129	2.50	30		
1,2-Dichloropropane	57.2	µg/L	50.00		114	68.6-124	1.56	30		
2-Butanone	41.2	µg/L	50.00		82.4	55.8-114	3.72	30		
2-Hexanone	55.2	µg/L	50.00		110	49.9-110	15.0	200		
4-Methyl-2-Pentanone	59.7	µg/L	50.00		119	57-114	10.9	30		
Acetone	59.5	µg/L	50.00		119	37.2-135	20.5	30		
Acrylonitrile	54.6	µg/L	50.00		109	45.3-148	25.2	30		
Benzene	52.8	µg/L	50.00		106	71.8-123	0.780	30		
Bromodichloromethane	61.2	µg/L	50.00		122	69.4-132	1.07	30		
Bromoform	47.8	µg/L	50.00		95.6	54.7-123	7.66	30		
Bromomethane	51.4	µg/L	50.00		103	10-143	11.1	30		
Carbon Disulfide	56.6	µg/L	50.00		113	80-159	9.35	30		
Carbon tetrachloride	59.6	µg/L	50.00		119	68.6-138	3.43	30		
Chlorobenzene	56.0	µg/L	50.00		112	80.1-122	3.03	30		
Chloroethane	56.4	µg/L	50.00		113	53.6-121	10.1	30		
Chloroform	60.6	µg/L	50.00		121	71.9-127	1.78	30		
Chloromethane	71.8	µg/L	50.00		144	28.3-124	6.41	30		
cis-1,2-Dichloroethene	55.0	µg/L	50.00		110	81.5-132	1.17	30		
cis-1,3-Dichloropropene	59.4	µg/L	50.00		119	74.9-117	0.620	30		
Dibromochloromethane	57.1	µg/L	50.00		114	65.1-132	2.20	30		
Ethylbenzene	57.0	µg/L	50.00		114	77.1-124	5.20	30		
m,p-Xylene	104	µg/L	100.0		104	77.4-126	4.18	30		
Methylene chloride	60.1	µg/L	50.00		120	69.2-138	0.317	30		
Methyl-t-Butyl Ether	51.1	µg/L	50.00		102	77.8-120	2.45	30		
o-Xylene	54.3	µg/L	50.00		109	74.9-124	3.56	30		
Styrene	54.6	µg/L	50.00		109	77.7-117	2.09	30		

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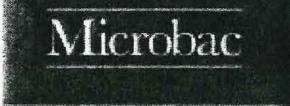
GCMS Volatiles - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B016588										
LCS Dup (B016588-BSD1)										
Prepared & Analyzed: 06/30/2011										
Tetrachloroethene	57.2		µg/L	50.00	114	81.9-127	4.54	30		
Toluene	59.6		µg/L	50.00	119	76.7-122	2.84	30		
trans-1,2-Dichloroethene	54.4		µg/L	50.00	109	67.6-126	4.09	30		
trans-1,3-Dichloropropene	56.7		µg/L	50.00	113	77.6-129	2.83	30		
Trichloroethene	59.3		µg/L	50.00	119	73.1-131	2.04	30		
Trichlorofluoromethane	66.8		µg/L	50.00	134	61.3-140	9.31	30		
Vinyl Acetate	52.5		µg/L	50.00	105	52.4-154	2.39	30		
Vinyl chloride	54.1		µg/L	50.00	108	48.5-124	11.1	30		
Surrogate: 1,2-Dichloroethane-d4	59		µg/L	50.00	118	51.7-162				
Surrogate: 4-Bromofluorobenzene	52		µg/L	50.00	104	57.4-135				
Surrogate: Dibromofluoromethane	50		µg/L	50.00	100	63.5-139				
Surrogate: Toluene-d8	54		µg/L	50.00	109	66.6-143				

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CERTIFICATE OF ANALYSIS

Work Order Number:

11F3016

O & M, Inc.

450 Montbrook Lane
Knoxville TN, 37919

Project Number: Fields Brook
Project Manager: Valerie A. Rule, P.E.

Reported:
08/18/2011 13:45

Certified Analyses included in this Report

Analyte	Certifications	
Code	Description	Number
A2LA	A2LA ISO/IEC 17025 Env. DoD Testing	3045.02
A2LA_	A2LA ISO/IEC 17025 Biological Testing	3045.01
AIHA	AIHA Laboratory Accreditation Program	100386
EPA	National Environmental Accreditation Program	PA00087
ILEPA	Illinois EPA wastewater and solid waste analysis	200064
INDEM	Indiana DEM support lab wastewater and solid waste	A305-9-292
INDH	Indiana SDH Micro analysis of drinking water	M-45-8
INSDH	Indiana SDH chemical analysis of drinking water	C-45-03
KADOH	Kansas Dept Health & Env. NELAP	E-10397
KYEPP	Kentucky EPPC analysis Underground Storage Tanks	75
NCDEN	North Carolina DENR NPDES effluent, surface water	597
NLLAP	National Lead Accreditation Program	100386
NYDOH	New York Department of Health	10121
NYDOH	New York Department of Health NELAP	11909
PA-AG	Pennsylvania Department of Agriculture	42143
PADEP	Pennsylvania DEP	25-00067
PARAD	Pennsylvania Certified Radon Laboratory	0064
USDA	USDA APHIS	PA-LAB-0002
USDAS	USDA Permit To Receive Soil	P330-09-00121
WSDNR	Wisconsin DRN chemical analysis wastewater, solids	998036710

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Notes and Definitions

E	Value above quantitation range
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference

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